



**Students' affective experience of connection with  
nature: An Australian University case study.**

David C E Hayward

A dissertation submitted in partial fulfilment of the requirements

for the degree of Bachelor of Education

(Honours)

Faculty of Education

University of Tasmania, Launceston

2016

**Declaration**

I certify that this dissertation contains no material that has been accepted for the award of any other degree or diploma in any institute, college or university. In addition, to the best of my knowledge and belief, it contains no material previously published or written by another person, except where due reference is made in the text of the dissertation.

.....

David Hayward

## Table of Contents

Chapter One: Introduction .....	1
Historical Overview and Paradigm Shift .....	2
Personal Journey and Impetus .....	4
Significance and Aims .....	5
Research Question .....	7
Key Terms .....	8
Outline of chapters .....	9
Chapter Two: Literature Review .....	10
Connection with Nature, Nature and Wilderness.....	10
Nature and Wilderness .....	10
Connection with Nature .....	11
Theoretical perspective .....	12
The use of the affective domain in education .....	16
Connection with Nature, the Environment, Society, Health and Well-Being.....	19
Recommendations from Outdoor Education and Affective Domain literature .....	21
Summary .....	22
Chapter Three: Methodology .....	24
Research Question .....	24
Epistemology .....	25
Theoretical Perspective .....	26
Research Design.....	26
Method .....	27
Ethics.....	33
Summary .....	34

Chapter Four: Findings .....	35
Participant description .....	35
Chronological description of the expedition .....	36
Thematic findings .....	39
Summary .....	45
Chapter Five: Discussion .....	46
Connection with Nature and Affective Domain.....	47
The Affective Nature Connection Matrix .....	47
The Affective Nature Connection Wave and Heartbeat .....	56
The Learning Context and Looking Deeper into the Bigger Picture .....	58
Summary .....	60
Chapter Six: Conclusion .....	61
Key Findings .....	61
Limitations .....	62
Significance.....	62
Implications.....	63
Recommendations for Future Research .....	66
Final Thoughts .....	67
References .....	68
Appendix A .....	75
Participant Information Sheet .....	75
Appendix B .....	78
Consent Form.....	78
Appendix C .....	80
Signpost Self-Assessment Form .....	80

Appendix D.....	81
Observation Schedule and Checklist (adapted from Smith, 2011) .....	81
Appendix E .....	82
Sample Interview Questions .....	82
Appendix F.....	84
Values Coding Sample .....	84
Appendix G.....	87
Round One Pattern Coding Sample .....	87
Appendix H.....	92
Round Two Pattern Coding Sample.....	92
Appendix I .....	98
Activities and Lessons .....	98

**Permission to Copy**

I hereby give permission to the staff of the university library and to the staff and students of the Faculty of Education to copy this dissertation in whole or part without reference to me. This permission covers only single copies made for study purposes, subject to conditions of acknowledgment.

.....

David Hayward

### **Acknowledgements and Gratitude**

I would like to express my gratitude to all those who helped me in completing my Honours project.

Most importantly I would like to thank my beautiful wife, Rachael. Thank you for hearing all of my ideas, reading all my stuff and being by my side all of the way around the world. I can't wait for the next chapter of our story together.

Thank you, Mum, for your love and support always and I am grateful for the opportunities that you've provided me that have allowed me to grow into the person I am today.

Thank you, Dad, for your love and support always and I am grateful for the opportunities that you've provided me that have allowed me to grow into the person I am today.

Thank you Robert and Jane: I don't know how I will ever repay the support you have given Rachael and, I but I will endeavor to do wherever I can.

Thank you to all the participants who took part in the study for without their cooperation and enthusiasm this research would not have been possible. And to the Walls of Jerusalem for being an awesome place to do research.

I would especially like express my gratitude to my supervisors Dr. Heidi Smith and Dr. David Moltow for all their advice, support, guidance and opportunities over the course of the project. I have enjoyed our experience together and I will always be grateful for everything you have given me and the influence you have had on my thinking.

Lastly, I would like to thanks the researchers, academics and scientists that feature in this thesis. All have influenced my thinking in some way and without their previous research this research would also not have been possible.

### Abstract

Emotion plays a significant role in the human experience, nevertheless, emotion, or the affective domain, has often been neglected in traditional learning environments. This research proposes that nature connection and the affective domain can be brought together to form a purposeful and powerful pedagogy. In light of this proposal, the aim of this research was to understand how initial teacher educators affectively experience connections with nature and how the understanding of this synthesis could help inform the current shift in Outdoor Education practice and pedagogy specifically, and curriculum and educational policies more broadly. The research was guided by the overarching question: *How do Outdoor Education initial teacher educators' in an Australian university, experience nature connection in the affective domain whilst on an extended wilderness expedition?* To answer this research question, qualitative naturalistic case study methodology was utilized, guided by the constructivist paradigm. A contextual framework underpinning this research was formed through the combination of two different but overlapping perspectives that acknowledge both the affective domain and the connection with nature elements of the research question. The collection of data involved in-field observations on a six-day wilderness expedition, participant interviews and reflective journals. The data was analysed inductively through the qualitative methods of descriptive, values and pattern coding.

The analysis of data found that the initial contextual framework was ineffective for the complex explanation of initial teacher educators' affective experience of connection with nature. Instead the Affective Nature Connection Matrix was generated to holistically analyse the participants experience. Through the Affective Nature Connection Matrix, a generalizable pattern called the Affective Nature Connection Wave emerged from the data. This pattern showed that



while the participants' experience was individually subjective, the experience was also similar in that all participants experienced a rise and fall of Affective Nature Connection. Further analysis showed that the Affective Nature Connection Wave was facilitated by an Affective Nature Connection Heartbeat that ran throughout the wilderness expedition. The Affective Nature Connection Matrix, Wave and Heartbeat was demonstrated to have implications for Outdoor Education practice, the Australian Curriculum and future educational policies.

Keywords: Nature connection, affective domain, Outdoor Education, Affective Nature Connection, Post Neo-Hahnism.

### List of Figures

Figure 2.1: Comparison of the key signposts to human relationships with nature and the affective domain taxonomy.....	15
Figure 5.1: Affective Nature Connection Matrix.....	48
Figure 5.2: Affective Traveling through Nature. ....	50
Figure 5.3: Affective Caring for Nature.....	53
Figure 5.4: Affective Integrated with Nature. ....	54
Figure 5.5: The Affective Nature Connection Wave.....	57
Figure 5.6: Affective Nature Connection Heartbeat. ....	58

## **Chapter One: Introduction**

Wilderness is the raw material out of which man has hammered the artifact called civilization. Aldo Leopold (1949).

The ability of human beings to process information cognitively is said to have evolved from affective processing (Adolphs & Damasio, 2000). Psychological research has found that “emotion is an integral attribute of cognition” (Adolphs & Damasio, 2000, p. 27), as the human cognitive process is effected by the emotional experience (Smith & Kirby, 2000). The inseparability of cognition and emotion has been attributed to higher order cognitive thinking requiring “the guidance provided by affective processing” (Adolphs & Damasio, 2000, p. 44). Yet, in an educational context, some have observed that the teaching of thinking and cognitive skills is considered more important and easier than teaching about affective skills such as values, beliefs or emotions (Iozzi, 1989; Shephard, 2008).

This research grew out of my own emotional and personal journey of connecting with the wild places in nature. It aims to, and has been deliberately designed to, examine Outdoor Education initial teacher educators' emotional affective responses whilst they are connecting with nature. The research is based upon the capacity and importance that connection with nature has for the health, happiness and survival of not only our own species but the whole planetary system. In Outdoor Education research, student specific emotional responses to nature has not been extensively researched as it has been in other areas of research such as environmental psychology (Kals & Maes, 2002; Tam, 2013a, 2013b). This research fills an important gap in

Outdoor Education research as a paradigm shift towards more sustainable and environmentally responsible approaches to teaching and learning occurs (Wattchow & Brown, 2011).

This introductory chapter provides the context to this research by summarizing the history of, and the current paradigm shift that is occurring within, Hahnian (Brookes, 2003a, 2003b; Nicol, 2002a, 2002b, 2003) derived Outdoor Education. My personal view, my journey and impetus to research the topic of affective connection with nature is shared through a brief personal narrative. Through the significance and aims, relevant literature describes the importance of this research from multiple perspectives, before outlining the theoretical framework underpinning this research. The research question will be outlined with a brief description of the methodology used in answering the research question together with the assumptions and limitations of this research. Definitions of key terms are then presented before concluding with a chapter overview of this thesis.

### **Historical Overview and Paradigm Shift**

An Education and Science conference in 1975 saw a group of Outdoor Educators decide on a trinity of teaching aims for the current paradigm of neo-Hahnian (Brookes, 2003a, 2003b; Nicol, 2002a, 2002b, 2003) Outdoor Education. This trinity of teaching aims was designed to teach students about: (1) Themselves; (2) Others and; (3) Nature (Nicol, 2002b; Wattchow & Brown, 2011). These teaching aims were summed up by Knapp (1989) who stated that “Outdoor Educators believe that teaching the whole student is more important than merely teaching subject matter” (p. 41). Due to the aims being based upon practitioner observations and not on academic research (Brown, 2008), they have been much critiqued in the decades following the conference. At first critiqued slowly (Knapp, 1989; Loynes, 1998; Lugg, 1999; Martin, 1996) then with a large volume of articles arriving after the turn of the century (Beames & Brown, 2013; Brookes,

2003a, 2003b; Brown, 2008; Cuthbertson, Socha, & Potter, 2004; Dymont & Potter, 2014; Lugg, 2005; Martin, 2004a, 2007; Martin & Thomas, 2000; Nicol, 2002a, 2002b, 2003; Quay, 2016; Wattchow, 2001, 2004). The extensive critique of Outdoor Education by Outdoor Educationalists has left Outdoor Education in a place of transition, where, as a field of teaching and pedagogical practice, Outdoor Education has been described as moving from a period of infancy to a period of adolescence (Nicol, 2014).

A paradigm shift is not a new concept for Outdoor Education in countries that have based their Outdoor Education on the ideals of Kurt Hahn. Between the world wars, Hahn saw a need to train and equip young people for a moral equivalent to war. The removal of war training and the introduction of the trinity of Outdoor Education teaching aims saw Neo-Hahnism as the second evolution of Hahnian derived Outdoor Education. As Hahnism gave rise to Neo-Hahnism, Neo-Hahnism has in turn given birth to a term that has emerged as a result of this research: *Post Neo-Hahnism*. Through the critiques of Neo-Hahnism, Post Neo-Hahnism is seeing a move in practitioners from an anthropocentric view to an ecocentric viewpoint of teaching Outdoor Education.

The ecocentric perspective moves the thinking of human relationships with the outdoors from thoughts of “what can I do in this place?” to “what will this place allow me to do?” It changes the way we consider the areas we visit as Outdoor Education teachers from places to teach *in* to places to teach *about*. Through teaching students about specific places, it is hoped they learn about their own and others’ place in the ecosystem and form influential relationships with places (Wattchow & Brown, 2011). It requires students to consider not only their own thoughts and feelings in particular places but also asks them to look at how places might feel about human presence in that place. This involves seeing the land as a living being not an

inanimate object. This perspective is grounded in the idea that people need to learn to love the world before they can be expected or asked to heal its wounds (Sobel, 1996).

### **Personal Journey and Impetus**

My own journey towards learning to love the world has been a lifelong adventure. From playing and camping outdoors as a child, to my outdoor working life and extended wilderness expeditions as I got older, have helped me form relationships with the specific places where the adventures have taken place. These places are as special to me as the relationships and bonds I have with my wife, family and close friends. The emotional bonds I have formed with various places I have visited around the world go further than an aesthetic appreciation. It is the exploration of this bond that formed the personal impetus for this research. In order to understand my own emotional bond with places, I ask how other people experience their connections with nature in an emotional or affective way?

Further impetus was provided by my third year practical experience. I had the fortune to work with a colleague teacher who was interested in how educational theory could contribute to making their practice as an Outdoor Educator more effective. My colleague teacher, during one such discussion on practice and theory, challenged me with the question “What can I do with my students in the short time I have them on expeditions, that is more than just teaching the ‘leave no trace’ principles?” The ‘leave no trace’ principles being the practice of minimizing an individual's impact on the environment they are traveling through. They are an important part of National Parks and World Heritage Area management. The context of this discussion was around teaching practice and students' perceived ability to connect with nature. This challenge caused me to reflect on my personal experience of National Parks and wilderness area expeditions as a university student and the pedagogies used by lecturers on those expeditions. The reflection on

my time as a student on wilderness expeditions, led me to consider how I felt, not just physically but emotionally as I was intentionally given opportunities and space to connect with nature on university expeditions.

A third and personal impetus for this research has been three recurring themes instilled by my University Outdoor Education lecturers as important factors to consider as an Outdoor Education Teacher of the future. First, Outdoor Education is in a transition period, with a re-envisioning process happening in literature and practice. The re-envisioning involves asking how Outdoor Education can be relevant to 21<sup>st</sup> Century education as a pedagogical practice and subject area. Second, sustainability education, as mandated by UNESCO is key to combating the environmental, social and economic problems faced in the 21<sup>st</sup> century. Knowledge and action competence are key competencies of sustainability education, with a focus on local knowledge leading to global action. Third, human relationships with nature and place are foundational aspects of Outdoor Education in the 21<sup>st</sup> Century, rising in part, from the re-envisioning process. It is understood that an individual's relationship with places and nature will contribute to their willingness to act in environmentally responsible ways.

### **Significance and Aims**

The key factor in this research is the study of human connection and relationships with nature. The human flourishing is reliant on healthy ecosystems to provide elements such as the air we breathe, the soil we grow crops in and the water we need to survive (Alcamo et al., 2003). Therefore, humans are inescapably (Greer, 2010) and interdependently linked with nature (Tam, 2013a). A healthy biosphere and ecosystems are pillars on which humans can live “a good life” (Alcamo et al., 2003, p. 74). So much so that our physical, emotional, psychological and spiritual wellbeing have a direct relationship with the environment we live in (Mallar et al., 2009). A

meta-analysis of 21 different studies on nature connection found an individuals' ability to have some connection with nature was, as influential for personal happiness and well-being as other accepted factors such as income and education level. The meta-analysis concluded that a "person's connection to nature should be considered an important construct when discussing happiness and vice versa" (Capaldi, Dopko, & Zelenski, 2014, p. 11).

As previously stated, humans are inescapably and interdependently linked with nature (Greer, 2010; Tam, 2013a). In light of this interdependency, it is argued that positive relationships with nature can be encouraged through educational experiences that actively promote connectedness with nature as "proximity is the most powerful determinant of caring behavior" (Martin, 2007, p. 59). Therefore, the first significance of this research is in adding to the understanding of how connections to nature are experienced. Understanding connections to nature allows educators to embed positive connections with nature explicitly into their pedagogies. As human wellbeing is dependent on the biosphere's wellbeing it is important to develop relationships with nature that are fostered through activities that promote closeness to nature.

A second key factor for the importance of this research comes in the form of past Outdoor Education literature which identifies the need to provide empirical evidence of students' experiences in Outdoor Education (Lugg, 1999; Martin, 2005; Wattchow, 2001; Wattchow & Brown, 2011). The need for this empirical evidence to be contextual to specific areas and/or places has also been identified (Wattchow & Brown, 2011). In accordance with the literature, Outdoor Education needs to exert effort into understanding "what happens when people encounter places, experience them and try to make sense of these experiences" (Wattchow, 2001, p. 1). Echoing these thoughts ten years later, Wattchow and Brown (2011) restate "research into



the subjective responses of outdoor educators and students, specifically into their lived experience of particular outdoor places, is the most likely form of inquiry to yield rewarding insights” (p. 104). For without clear empirical evidence, Outdoor Education cannot back its claims of educational effectiveness to the individual and society (Lugg, 1999). While it may be difficult to examine this experience as it is subjective to the individual, it is nonetheless essential that Outdoor Education academics do so (Lugg, 1999; Wattchow & Brown, 2011). The repetition of the statement for empirical evidence is congruent with the belief that connection to nature is an important and significant area of study in Outdoor Education (Brown, 2008; Martin, 2004a, 2004b, 2005, 2007; Wattchow, 2001, 2004; Wattchow & Brown, 2011).

### **Research Question**

This research aims to understand how initial teacher educators experience and grow their own connection with nature. The research will be guided by the following overarching question:

**How do Outdoor Education initial teacher educators’, in an Australian university, experience nature connection in the affective domain whilst on an extended wilderness expedition?**

Through conducting this research an understanding of what the initial teacher educator participants’ emotionally feel in regards to nature connection whilst on a wilderness expedition was gained. To answer the research question, qualitative naturalistic case study methodology was used guided by the constructivist paradigm. Collection of data involved in-field observations, participant interviews and reflective journals, with the data being analyzed through coding methods. The theoretical perspective underpinning this research was formed through the combination of two frameworks that acknowledge both sides of the research question. The *key signposts to human relationships with nature* (Martin, 2005) reflects connection to nature

research while the *affective domain taxonomy* (Krathwohl, Bloom, & Masia, 1964) represents affective domain research. This research assumes that the participants have an established connection with nature as they are Outdoor Education initial teacher educators. The participants also frame some of the limitations of this study as the research focused on one cohort of Outdoor Education initial teacher educators during one extended wilderness expedition.

### **Key Terms**

**Affective Domain.** The domain of learning that is concerned with feelings, emotions, values, the internalization of values and the outward display of values. It is linked closely with the cognitive domain and the psycho-motor domain.

**Affective Domain Taxonomy.** A taxonomy used for the purposes of understanding and teaching feelings, emotions, values, the internalization of values and the outward display of values. It was created in conjunction with the cognitive domain taxonomy and the psycho-motor domain taxonomy.

**Connection with nature.** The individually subjective way in which humans' act, think, feel and behave towards nature.

**Extended wilderness expedition.** Field trips into the wilderness of a duration longer than three days.

**Initial teacher educator.** University students studying education.

**Key signposts to human relationships with nature.** A measure of connection with nature, specific to Outdoor Education

**Outdoor Educator.** Any person who guides, instructs, teaches, educates, or conducts research in Outdoor Education.

**Nature.** Living systems on Earth that exist with or without human interference.

**Wilderness.** Areas of living systems without obvious human interference.

### **Outline of chapters**

This chapter has provided context for the research along with the significance, aims and definition of key terms. Chapter two will give a review of the significant connections with nature and affective domain literature relevant to this research. Chapter three details the qualitative naturalistic case study methodology and methods used in conducting this research. Chapter four shows the results from the data collection and analysis through a chronological description of the expedition and a structured explanation of the participants' affective experiences. Chapter five provides a discussion of the research interpretation, introducing the theoretical constructs that emerged from the data analysis. Chapter six concludes with the implications of the resulting theoretical constructs that I have called the *Affective Nature Connection Matrix, Wave and Heartbeat*.

## **Chapter Two: Literature Review**

The format of this literature review serves four purposes. First, it begins by expanding the definitions of nature, wilderness and connection with nature. It is important to understand these definitions as they are a key component of the theoretical perspective that follows. Second, a description of the *key signposts to human relationships with nature* (Martin, 2005) and the *affective domain taxonomy* (Krathwohl et al., 1964) are provided, together with a contextual framework that shows the comparison and pairing of the two constructs. The theoretical perspective provides context for the review of affective domain and connection with nature literature that follows. Third, relevant affective domain and connection with nature literature are presented to show their differing and similar perspectives. Fourth, the literature review concludes by detailing the recommendations of the affective domain and connection with nature research literature and their influence on the research question.

### **Connection with Nature, Nature and Wilderness**

The introduction of key terms in regards to this research is problematic, as the terms “connection with nature”, “nature”, and “wilderness” while having their own standard dictionary definitions are also individually (Vinning, Merrick, & Price, 2008) and socially (Dyment & Potter, 2014) constructed. That is, the words will have a different meaning to different individuals, in different socio-cultural contexts and will therefore always be contested (Dyment & Potter, 2014). While the following definitions are contentious, they are used in the context of this study and are not meant to be definitive or complete.

### **Nature and Wilderness**

In Western-Eurocentric societies the understandings of the term ‘nature’ has been described as being dichotomous, with humans viewing themselves as either a part of or separate

from nature (Vinning et al., 2008). This dichotomy, however, may only be apparent as the results from a study of 198 participants over three different surveys showed that, while a majority of participants viewed humans and themselves as a part of nature, they also viewed nature as existing mainly in places of wilderness separate from humanity or man-made structures (Vinning et al., 2008). Greer (2010) describes the apparent dichotomy as a disconnect between the biological reality of life and the language in common use around nature such as conquering, encountering, reclaiming, appreciating or adoring nature. This is summed up by Bratman, Hamilton, and Daily (2012) as the long running debate between the areas of the natural sciences and the humanities over nature either as a “social construction or if it exists on its own in an independent and constant form” (p. 120).

While acknowledging the apparent dichotomy, a pragmatic decision was made in this research to follow Zylstra (2014) and Bratman et al. (2012) in defining nature as “any element of the biophysical system which includes flora, fauna and geological landforms occurring across a range of scales and degrees of human presence” (Zylstra, 2014, p. 41). Nature in the context of this study is understood to be: Living systems on Earth that exist with or without human interference. The debate on what is or is not wilderness continues in a similar vein to the debate about nature. However, as the definition of nature is living systems on Earth that exist with or without human interference, in the context of this research, wilderness is defined as areas of living systems without obvious human interference (Bratman et al., 2012).

### **Connection with Nature**

The term “connection with nature” is one of many phrases scholars use to describe the relationship or connection between the human and non-human world. The use of one term is neither consistent nor agreed upon across the literature. For example: one author uses

“relationships with nature”, “human/nature relationships” and “human to nature relationships” (Martin, 2004a, 2004b, 2005) over the course of three separate articles discussing their own research on nature connection. A review of Environmental psychology research reveals the use of terms such as “commitment to nature”, “connectedness to nature”, “connectivity with nature” and “nature relatedness” (Tam, 2013a) to discuss the similar yet important difference that each term measures. Despite these differing positions, an individual’s connection with nature is generally agreed upon as: 1) the level of personal attachment to nature; 2) the level of knowledge about nature an individual applies in day to day life (Tam, 2013a), and; 3) conscious attention to the relationship between a human and the rest of nature (Zylstra, 2014). In justifying the use of connection with nature, this research follows the reasoning of Greer (2010) who states that connection with nature is used “because it evokes the subtle yet important idea that ... humans are already an intimate part of nature” (p. 42). Therefore, this research defines connection with nature as the extent to which initial teacher educators act, think, feel and behave towards nature on the wilderness expedition.

### **Theoretical perspective**

**Key Signposts to Human Relationships with Nature.** This research utilises a framework of connection to nature specific to Outdoor Education called the key signposts to human relationships with nature (Martin, 2005). The key signposts to human relationships with nature (Martin, 2005) provides one way to understand humans’ developing, changing and individually different relationships with nature. It is important to have a clear understanding of this concept as the key signposts to human relationships with nature (Martin, 2005) inform one part of this study’s theoretical perspective. While the signposts (Martin, 2005) can be viewed as a continuum of human/nature relationships they are not, in themselves, a theory. Originally they

were descriptors used to encapsulate data sets from a longitudinal study on human nature relationships (P. Martin, personal communication, September 22, 2015). In the field, the signposts have been used in a diagnostic assessment capacity, in order to ascertain where on the signposts a student might sit and what pedagogical procedures are of most use to that student.

The four signposts suggest that individuals move through stages of being alienated from nature, traveling through nature, caring for nature and integrated with nature whilst developing a relationship or connection with nature (Martin, 2005). Individuals at the *Alienated from Nature* level see nature as frightening and do not affiliate humans as being a part of nature (Martin, 2005). Individuals identified in the *Traveling through Nature* category see nature as a place to go usually to have fun, relating to nature the same way as they would an indoor gymnasium. Pro environmental behaviour can be observed when in nature but is forgotten or neglected in the home environment (Martin, 2005). In *Caring for Nature* a sense of stewardship or friendship emerges. Pro-environmental behaviour pervades into the individual's everyday life, with the beginnings of deeper connection to nature not present in Traveling through Nature. Individuals display attitudes such as a reciprocal friendship with nature and an internalized desire to care for nature. Lastly *Integrated with Nature* can be observed through actions such as a pervasive concern for environmental wellbeing that impacts upon an individual's everyday life, seeing the self as an inseparable part of nature and, having a sensuous or kinesthetic relationship with nature indicating a deep ubiquitous connection (Martin, 2005). The key signposts to human relationships with nature (Martin, 2005) inform one facet of the theoretical perspective of this research.

**Affective Domain.** The second facet of the theoretical perspective of this research is the affective domain taxonomy (Krathwohl et al., 1964). The middle 20th century saw educational

researchers, Benjamin Bloom, David Krathwohl & Bertram Masia develop and design three influential taxonomies of educational objectives. In education, the cognitive domain taxonomy is used for understanding the development of thinking from lower order to higher order thinking, while the psychomotor domain taxonomy is used in the assessment of motor and movement skills (Krathwohl et al., 1964). The affective domain taxonomy (Krathwohl et al., 1964) is used in education to understand and teach about feelings, emotions, values and beliefs (Pierre & Oughton, 2007). The affective domain taxonomy (Krathwohl et al., 1964) has five levels on a hierarchical continuum. 1) *Receiving* information from stimuli by showing attention and a readiness to experience stimulus or selective awareness. 2) *Responding* to stimuli by showing cooperation, conformity, satisfaction and contribution. 3) *Valuing* certain stimuli by showing a preference of certain values over others and a commitment to certain values of importance. 4) *Internalization of values* shows a clarification and organization of values into an order of preference. And 5) *Characterization by a value or value complex* whereby individuals' endeavor to create a philosophy of life that they can justifiably live by (Krathwohl et al., 1964). Learning objectives in the affective domain are multifaceted, ranging from the understanding of one's own emotions and the everyday implementation of personal beliefs and philosophies, to the emotional component of learning and the understanding of other beings' emotional responses (Shephard, 2008). In this research as the study aims to investigate the feelings, emotions and values of initial teacher educators experience of connection to nature, the affective domain taxonomy (Krathwohl et al., 1964) is used alongside the key signposts to human relationships with nature (Martin, 2005) to form the theoretical perspective of this research.

**Contextual Framework.** The theoretical perspective of this research was revealed through the literature review process. The key signposts to human relationships with nature



(Martin, 2005) and the affective domain taxonomy (Krathwohl et al., 1964) allow a contextual framework to be designed. They provide a theoretical base for the research question, data collection, data analysis and conclusion to proceed from. A precedent for laying the affective domain taxonomy (Krathwohl et al., 1964) alongside a connection with nature framework was set by Kellert (2002) through the comparison of the values of Biophilia with the affective domain taxonomy. Figure 2.1 shows a comparison of the key signposts (Martin, 2005) alongside the affective domain taxonomy (Krathwohl et al., 1964).

Signposts to human relationship with nature (Martin, 2005)	Affective Domain Taxonomy (Krathwohl et al., 1964)
Alienated from nature.	Receiving.
Traveling through nature.	
	Responding.
Caring for nature.	
	Valuing.
	Internalization of values.
Integrated with nature.	
	Characterization by a value or value complex.

*Figure 2.1: Comparison of the key signposts to human relationships with nature and the affective domain taxonomy.*

The values given to the size of each level are not indicative of the amount of time an individual spends at that stage but were designed to show the similarities between the two constructs. For example: an individual traveling through nature, must by their very situation, be receiving stimulus from their environment, or individuals who care for nature must have at some point

given a value to nature. Likewise, individuals who have grown to see themselves as an inseparable part of nature could be argued to have developed a philosophy of life and are acting in accordance to their own constructed philosophy.

The pairing of the key signposts to human relationships with nature (Martin, 2005) with the affective domain taxonomy (Krathwohl et al., 1964) serves two purposes in this literature review. First, it is the foundation of the theoretical perspective of this research. The comparison and similarities of the key signposts to human relationships with nature (Martin, 2005) with the affective domain taxonomy (Krathwohl et al., 1964) opens up a theoretical framework by which to examine the feelings and emotions of initial teacher educators' experiences of connections with nature on an extended wilderness expedition. Second, the combination of the key signposts to human relationships with nature (Martin, 2005) and the affective domain taxonomy (Krathwohl et al., 1964) provides a context for the background and review of affective domain and connection with nature research literature as relevant to this study.

### **The use of the affective domain in education**

The use of affective learning alongside cognitive learning has long been considered essential for holistic education (Bloom, Hastings, & Madaus, 1971; Buissink-Smith, Mann, & Shephard, 2011; Iozzi, 1989; Pierre & Oughton, 2007; Shoffner, 2009), with UNESCO identifying affective learning as an essential part of 21<sup>st</sup> century education and one not to be overlooked (Buissink-Smith et al., 2011). Contextually, in Australia, affective learning and elements of the affective domain can be found in guiding educational documents. The Melbourne Declaration on Educational Goals for Young Australians uses affective specific language such as, “self-worth, self-awareness and personal identity”, “manage emotional, mental, spiritual and physical wellbeing”, “develop personal values and attributes”, “act with moral and ethical

integrity” and “work for the common good, in particular sustaining and improving natural and social environments” (MCEETYA, 2008, pp. 7-11). These goals are reflected in the Australian Curriculum through the general capabilities areas of “Critical and Creative Thinking”, “Personal and Social Capability” “Ethical Understanding” & “Intercultural Understanding”, the cross curricular priorities and across the general subject areas (ACARA, 2016).

Consistent throughout the literature on the teaching of affective outcomes is the notion that the cognitive and affective components of education cannot, and should not, be separated. Pierre and Oughton (2007) state it is not possible to display purely cognitive or purely affective behaviour, but at all times show a mixture of both. Likewise, from an environmental education perspective, Iozzi (1989) expresses that emotion is entwined with knowledge, and it is this combination that gives humans the capacity to be free-thinking and rational. Echoing previous notions of the congeniality between cognitive and affective learning by voicing the opinion that true education is absent if knowledge is not allowed to be connected with emotion, Rosiek (2003) offers a compelling reason why the study of emotion is important to teachers. Backing his position that teachers are duty bound to consider the affective nature of learning, Rosiek (2003) argues that the “human experience is an emotional affair” (p. 399) and stipulates that responding to students’ “emotional experience is a moral necessity” (p. 400).

In contrast to the claims of its importance, affective domain research is poorly represented in the literature. The combination of cognitive and affective learning is often uncommon in classrooms (Iozzi, 1989), as affective goals have often been avoided in education (Shephard, 2008) because of a teaching preference for other domains (Pierre & Oughton, 2007). Multifarious explanations are given for this avoidance, ranging from blaming Descartes and the separation of body and mind, to teachers who spurn the confusion and unreliability of capricious

students who do not know or understand their emotions for the stability of cognitive classroom predictability and the ease of cognitive learning outcome measurement (Pierre & Oughton, 2007). Rosiek (2003) has similar sentiments to Pierre and Oughton (2007), that Western society's deformation of emotions is due to emotions being seen "as the opposite of rationality and an inhibitor of intelligence" (p. 410). An environmental psychology perspective is given by Kals and Maes (2002) who state that there are "practical problems" in "assessing and measuring emotions" (p. 106) but do not offer an explanation as to what those problems may be or how to overcome them.

The inattention to emotion in some research has come about by environmental psychology utilising many of the same theories as social psychology, where "the behavioural impact of emotions" (Kals & Maes, 2002, p. 195) has traditionally been neglected. A case for the lack of explicit affective learning design is provided by Buissink-Smith et al. (2011), explaining that "affective characteristics are often hidden ... not easily expressed, subjective, imprecise, developed slowly, personal, private and difficult to observe" (p. 103). Regardless of why affective domain research has been neglected in the past, this research focuses on the affective experience of connecting with nature rather than physical, mental or spiritual connection because of the importance of affective domain research to 21<sup>st</sup> century education and the health and wellbeing of the environment and society.

The empirical evidence from this study is aimed at understanding how participants feel and experience connections to nature, in order to gain insights into the affective pedagogical implications of teaching connections with nature. In Outdoor Education literature virtually no research purposefully considers both the affective domain and connection with nature specifically. Knapp (1989) delivers an article calling for the "humanizing of outdoor education"

(p. 1), where he discusses the inseparability of the affective, cognitive and psychomotor domains and the barriers to teaching affective learning outcomes in Outdoor Education. The barriers to teaching affective learning outcomes in Outdoor Education include the difficulty in evaluating affective outcomes and the length of time needed to see results in affective education. The inseparability and barriers identified by Knapp (1989) in Outdoor Education echo the ongoing issues in affective teaching and learning previously discussed.

### **Connection with Nature, the Environment, Society, Health and Well-Being**

Connection with nature's link to environmental and social crises is apparent in literature across differing areas of investigation. The environmental crises of "global climate change, toxification of the planet and the loss of biodiversity and ecosystem services" (Zylstra, 2014, p. 27) and the social crises of "rising poverty levels, population growth and inequities in standards of living; health and family breakdowns; increased crime; value crises; financial crises; education shortfalls; political polarization and institutional inertia; anger, alienation, apathy, discontent, stress and depression" have combined to sabotage "social-ecological resilience" (Zylstra, 2014, p. 27). Similar sentiments are described by Quay (2016) in stating that the current cultural and environmental crises are two sides to the same problem. The problem is exacerbated in Orr's view by the myths that all education is good. Just as the "perpetrators of ... the holocaust were the heirs of Kant and Goethe, widely thought to be the best educated people on earth. But their education did not serve as an adequate barrier to barbarity" (Orr, 2004, p. 7), it is not the illiterate that has brought the world climate instability, mass extinctions and biodiversity loss, it is those with higher education (Orr, 2004).

A concern to be noted from a study involving semi-structured interviews of twenty-one teachers and environmental officers, found that student's feelings and attitudes on field trips to

environmental educational centers fell into two categories. Students visiting to environmental educational centers were both interested and engaged by showing excitement and curiosity on one hand and insecure and afraid on the other by showing feelings of discomfort and fear (Fägerstam, 2012). These student feelings echo in their own way the dichotomy discussed in the defining of nature. Importantly, a study on an individual's capacity to empathize with nature offers the environmental psychology perspective that connecting with nature can help ease the current environmental crises (Tam, 2013a).

Alongside the potential to ease the current crises, connecting with nature has been shown to play an important factor in health and well-being. An analysis of a program in the United Kingdom where approximately 18 500 participants were challenged to "do something wild" during June 2015, justifies the program with the statement that, "connection to nature is emerging as an important construct for well-being, alongside established societal factors such as income and education" (Richardson, Cormack, McRobert, & Underhill, 2016, p. 2). Information given to participants in this research purposefully did not target areas of "health, well-being and conservation" (Richardson et al., 2016, p. 9) however, the results from pre, post and follow up surveys found "statistically significant increases ... for connection to nature, health, happiness and number of reported conservation behaviors" (Richardson et al., 2016, p. 7).

The research of Richardson et al. (2016) provides evidence for interventions that provides impetus and real life examples for people to make time for nature in their lives and can have a wide range of positive outcomes for both the individual and the environment. From the above literature this research takes the viewpoint that teaching connection with nature has the potential to positively affect the health and wellbeing of individuals, society and the environment. The outcomes of this research in investigating the emotional or affective experience of connection

with nature, addresses recommendations from both affective domain and Outdoor Education literature.

### **Recommendations from Outdoor Education and Affective Domain literature**

Outdoor Education research literature calls for a deeper understanding of participant experiences. Wattchow (2001) expresses that, “we [Outdoor Education researchers] must be prepared to work hard as a profession to understand what happens when people encounter places, experience them, and try to make sense of these experiences” (p. 1). Together with Brown, he restated this viewpoint in 2011, saying “research into the subjective responses of outdoor educators and students, specifically into their lived experience of particular outdoor places, is the most likely form of inquiry to yield rewarding insights” (Wattchow & Brown, 2011, p. 104). These directives are particularly poignant for this research and were instrumental in the formation of the research question, as each participant’s emotional experience of connection with nature is subjective and personal to that participant.

The affective domain research literature shows concern for the importance of, and difficulties faced when teaching in, the affective domain. This ultimately leads academic authors to describe a path forward for teaching and learning in the affective domain. For example: Shephard (2008) gives a carte blanche directive into affective domain research with the caveat that research into his proposed method of teaching affective learning outcomes will be needed as it is with all forms of affective learning. Pierre and Oughton (2007) are more specific by stating that further research is needed into the assessment and student achievement of affective learning outcomes. Meanwhile, a concise, helpful and descriptive position is Rosiek’s (2003) view that emotional connection pedagogies should be a normative part of a teacher’s pedagogical content knowledge. He states that research is needed to further the area of understanding student subject

specific emotional responses (Rosiek, 2003). Understanding student subject specific emotional responses is achieved in this research by targeting university Outdoor Education initial teacher educators.

This research combines the recommendations from affective domain and Outdoor Education literature by asking the question: *How do Outdoor Education initial teacher educators in an Australian university, experience nature connections in the affective domain whilst on an extended wilderness expedition?* Outdoor Education literature asks for research into the subjective experiences of students, while affective domain literature calls for research into the teaching and attainment of affective outcomes. Both sides of the relevant literature ask for this type of research for the betterment of their respective fields and the advancement of pedagogical practices as relevant to their fields of expertise. The combination of the theoretical perspective and literature recommendations give this research into Outdoor Education initial teacher educators' experience of nature connection in the affective domain on an extended wilderness expedition a sound foundation for the methodological procedures of this research that will be explained in chapter three.

## **Summary**

This literature review began by outlining the key terms involved with this research thesis. Definitions of nature, wilderness, connection with nature and the key signposts to human relationships with nature (Martin, 2005) were given as a guide to the underpinning theoretical perspective. The affective domain taxonomy (Krathwohl et al., 1964) completed the theoretical perspective before a pairing and comparison of the key signposts to human relationships with nature framework (Martin, 2005) with the affective domain taxonomy framework (Krathwohl et al., 1964). A review of affective domain and connection with nature literature was followed by



linking the research question with the relevant literature. The following chapter will detail the methodology used in answering the research question which was guided by the theoretical perspective of this research.

### **Chapter Three: Methodology**

In the following chapter I explain the methodology and methods used in conducting this research. First I show how I arrived at my qualitative research question through the means of a question driven approach to research. Methodologically I describe the epistemological paradigm, theoretical perspective and research design. The methodology is followed by the specific methods of participant selection, data collection and data analysis employed in this undertaking of research into Outdoor Education initial teacher educators' affective experiences of connection with nature on extended wilderness expeditions. Lastly, ethical considerations for this research thesis is given before a brief explanation of the following findings and discussions chapters.

#### **Research Question**

The research question was born through a combination of personal experience and literature analysis. The literature shows that nature connection and nature relationships are important for individuals and the planet (Greer, 2010; Martin, 2004b, 2005; Richardson et al., 2016; Tam, 2013a, 2013b; Zylstra, 2014), while Outdoor Education studies and research have not had an explicit focus on the affective domain (Martin, 2004b). In order to understand how or if the affective domain taxonomy (Krathwohl et al., 1964) is connected to the key signposts to human relationships with nature (Martin, 2005) as outlined in the literature review, I posed the research question:

**How do Outdoor Education initial teacher educators' in an Australian university,  
experience nature connections in the affective domain whilst on an extended  
wilderness expedition?**

The evolution of experiences that led me to the research question and the development of qualitative methods used in answering the question is the foundation and drive of the “question-driven approach” (Punch & Oancea, 2014, p. 19) to this research.

### **Epistemology**

The epistemological paradigm that underpins this research is the social construction and constructivism paradigm (Patton, 2002). The research is located in this paradigm because of the constructivist belief that individuals perceive reality through constructing meaning of their interactions with the world around them (Crotty, 1998). If reality is individually constructed then one individual's perception of what reality is, must be different from another individual's separately constructed reality (Creswell, 2014). As a result of this individual construction this research is located in the social construction and constructivist paradigm, as it asks individual initial teacher educators for their subjective experiences of connection with nature in the affective domain on a wilderness expedition.

An important aspect of the constructivist paradigm is the acknowledgement of the researcher's own perspective and the subjective nature of their interpretation of the data. As I showed in the introduction I have strong personal and professional reasons for undertaking this research. Two main factors influence my drive to understand individually subjective experiences of connecting with nature: Firstly, as an Outdoor Education initial teacher educator I am interested in the combination of theory and practice in my field of experience, and how this combination can positively influence students' level of care for nature; Secondly, the area in which the wilderness expedition and in field observations took place, holds a special place in my heart. Therefore, the results, discussion and conclusion will be co-constructed between myself and the participants of this study (Hatch, 2002).

### **Theoretical Perspective**

As detailed in the literature review this research thesis is guided by two theoretical perspectives, the key signposts to human relationships with nature (Martin, 2005) and the affective domain taxonomy (Krathwohl et al., 1964). These two perspectives form the contextual framework that guides the research question, data collection, data analysis and research findings.

### **Research Design**

The design of this research thesis combines three separate but compatible research elements. Following the question driven approach it was first decided the research needed to be a qualitative study. The research is qualitative in nature due to the selection of methods that were most likely to be successful in answering the research question. Methods such as in-field observations, interviews and document analysis meant that the “research is empirical research where the data are not in the form of numbers” (Punch & Oancea, 2014, p. 3). Second, it was decided that the research needed to be a naturalistic inquiry. Guided by the three themes of naturalistic inquiry covering: (1) Design strategies; (2) Data collection and fieldwork strategies and; (3) Analysis Strategies (Patton, 2002) give this research its validity as a research method as they “constitute a comprehensive and coherent strategic framework for qualitative inquiry” (Patton, 2002, p. 39). Naturalistic inquiry coupled with the constructivist paradigm allow this research to be located in a real world setting, in order to understand the experiences of participants by not making any manipulations or attempting to control the experience. The data collected through this naturalistic inquiry were analyzed holistically with no preconception to the outcome (Patton, 2002).

Last in the research design process was the decision that a case study method was the best strategy for this research, as case studies find a specialty in research where “a how or why

question is being asked about a contemporary set of events over which a researcher has little or no control” (Yin, 2014, p. 14). Furthermore, the scope of a case study is defined as: “an empirical inquiry that investigates a contemporary phenomenon (the “case”) in depth and within its real world contexts, especially when the boundaries between the phenomenon and the context may not be clearly evident” (Yin, 2014, p. 16). The combination of these three elements of research design gives this research the theoretical perspective of: Qualitative naturalistic case study inquiry. This combination gave me as the researcher the opportunity to gather data in close proximity to the participants from a non-manipulative position in context to the participants’ experience. The designation of qualitative naturalistic case study inquiry along with the research question binds the research to one initial teacher educators’ experience of connection with nature in the affective domain on one wilderness expedition.

## **Method**

The following method section outlines the unit of analysis, participant selection, data collection methods, data analysis and data interpretation methods. Inherent in case study research is the need to define and bind the case’s unit of analysis for data collection, analysis and interpretation (Yin, 2014).

**Definition of case.** An individual case in this research is one Outdoor Education initial teacher educator.

**Bounding of case.** The case study is bounded to one Outdoor Education initial teacher educator experience of nature connection in the affective domain whilst on one extended wilderness expedition.

**Unit of analysis.** External validity is met through the decision to use multiple cases (multiple participants) but only one unit of analysis (individual initial teacher educator). This gives the research a multiple label because there is more than one case and a holistic classification as the cases are bounded by their context (Yin, 2014). The definition and bounding of the case gives this research a multiple holistic case study unit of analysis.

**Participant selection.** Purposeful criterion sampling was used in the selection of participants in this research (Patton, 2002). Guided by the research question the participants of this research needed to fulfil the following criteria:

- Be an initial teacher educator at an Australian university
- Specialize in Outdoor Education as a part of their education degree
- Be enrolled in an Outdoor Education specialization unit with a wilderness expedition
- Attend the wilderness expedition for the entirety of its duration.

All initial teacher educators enrolled in the Outdoor Education specialization unit with a wilderness expedition were invited to be a part of the study. This was done through an introduction and information session to the research conducted in class time before the expedition (See Appendix A & B). Of those students invited, eight consented to be participants in this research. One consenting participant was unable to attend the wilderness expedition for personal reasons and was thus disqualified from the selection criterion, leaving a sample size of seven. The participants consisted of four females and three males and were aged between 18 and 30. Participant anonymity was maintained throughout the research by pseudonyms being substituted for participants' real names.

**Data collection.** Data collection was conducted in four phases. Multiple phases of data collection were employed for internal validity purposes as three or more data collection points results in data collection triangulation (Patton, 2002).

**Phase One:** During the introduction and information session, participants were asked to complete a self-reporting survey (See Appendix C) by indicating where they thought they sat on the key signposts to human relationships with nature (Martin, 2005). The participants were asked to complete the survey as a way to refresh their understanding of the key signposts to human relationships with nature (Martin, 2005) and explain to the participants the focus of the research.

**Phase Two:** The direct unstructured observation (Punch & Oancea, 2014) of the initial teacher educators on the wilderness expedition took place in April 2016. The observation period was for the entirety of the six-day wilderness expedition. I used the key signposts to human relationships with nature (Martin, 2005) and the affective domain taxonomy (Krathwohl et al., 1964) to guide my in-field observations (see Appendix D). The unstructured observation of participants interacting with place and nature in context allowed me to observe and note the happening of critical incidences during the expedition for use in the third phase of data collection. In this context, critical incidences were occurrences on the expedition where an initial teacher educator interacted with their surrounds or other members of the expedition, including myself, in a way that was in line with the parameters of the key signposts to human relationships with nature (Martin, 2005) and the affective domain taxonomy (Krathwohl et al., 1964). As much as possible I maintained an “observer as participant” (Punch & Oancea, 2014 p. 200) role on the wilderness expedition, as it would be unethical to lead participants to similar conclusions as my own. However, during the observation period my love for the Walls of Jerusalem National Park

could have been manifested outwardly through comments or gestures of appreciation of the landscape.

**Phase Three:** One-on-one conversational semi-structured interview (Patton, 2002) using my observations of critical incidents (See Appendix E). The interviews were approximately 60 to 70 minutes in length and consisted of questions about the participants' experience of connecting with nature on the wilderness expedition. The interview questions were guided by the day to day and overall observations of critical incidences collected in the field during the expedition. The interview was transcribed verbatim and participants were given the opportunity to read the interview transcript for clarification and removal of any aspects they did not wish to remain before analysis.

**Phase Four:** Retrieval of initial teacher educator reflections on the wilderness expedition for document analysis. These reflections were one part of the initial teacher educators' assessment for the Outdoor Education specialization unit with a wilderness expedition.

One unforeseen ethical consideration occurred during the data collection phase. Initially the research method was to select only three or four initial teacher educators from the consenting research participants. However, the decision was made that in a small group it would be extremely difficult and unethical to select one consenting participant over another as this could either single out a participant or make other participants feel unworthy. Either action could have the potential to impact on the participant's wilderness and/or learning experience. A decision was therefore made in the field to include all seven consenting participants in all the research data collection phases and randomly select participants during the data analysis phase. The pragmatic and ethical decision to include all seven participants in all the data collection phases resolved



itself in the data analysis through the random selection of two females and two male participants, cutting the sample size from seven to four. This participant selection was done due to the time constraints and practicalities of the research. It is these four participants that are the focus of the remainder of the research.

**Data analysis.** The analysis of data in a multiple holistic case study allowed the cases (individual initial teacher educators) to be studied simultaneously in relation to the larger phenomenon (connection with nature in the affective domain on a wilderness expedition) (Stake, 2005). The analysis was conducted in two phases, a descriptive phase and an interpretive phase (Patton, 2002). I used the contextual framework (see Figure 2.1, p.15) to guide the data analysis, as the contextual framework helped to focus the themes that emerged from the coding process and helped inform the inductive phase of the research. One final practical decision was made at the data analysis stage. I decided, due to the time constraints and practicalities of the honours research project, in terms of the data collected, to utilize the participant interviews and my expedition observations as the main form of analyzed data.

***The Descriptive Phase.*** The first step in the analysis of data in this study was conducted in order to deconstruct each case's data into a set of prevalent categories that emerged from the data (Patton, 2002; Yin, 2014). The data were coded in two cycles of coding methods allowing for the classification and refinement of the collected data (Saldaña, 2009). The first cycle of coding consisted of descriptive and affective coding (Saldaña, 2009). Through descriptive coding, I was able to identify the key emerging topics of the data (Saldaña, 2009). The interview transcripts and observations were broken down to initial themes and emergent common topics of what was happening at a particular time or place on the expedition. The descriptive coding was followed by affective coding methods. Affective methods were chosen purposefully to answer

the research question as “affective coding methods investigate subjective qualities of human experience by directly acknowledging and naming those experiences” (Saldaña, 2009, p. 86).

In order to address the research aims, two types of affective coding methods were used. First, emotion coding labeled the data in accordance with the expressed emotions of the participants that had emerged from the data. These emotions ranged from feelings of comfort and discomfort to deeper emotions such as love, care and intimacy. The second affective coding method used was values coding (Saldana, 2009). Values coding is a reflection of “participants’ values, attitudes and beliefs, representing his or her perspectives or worldview” (Saldaña, 2009, p. 89) (See Appendix F). This coding cycle included participants’ religious beliefs, their personal value of nature, attitude and behavior changes throughout the expedition. Together the rounds of the first cycle of coding gave a description of the expedition, the participants’ subjective feelings throughout the expedition and a reflection of their values. The second cycle of coding involved grouping the codes generated in the first cycle of coding into categories of similar themes (Saldaña, 2009). Pattern coding involved grouping similar codes from the first round of coding together under one “meta-code” (Saldaña, 2009, p. 152) (See Appendix G), while the last round of coding for the descriptive phase of data analysis involved using the meta codes to further refine the explanation of participant experience (See Appendix H).

***The interpretive phase.*** This research follows the constructivist paradigm and a naturalistic line of inquiry, so an inductive research process was used to interpret the descriptive phase of analysis. The key signposts to human relationships with nature (Martin, 2005), and the affective domain taxonomy (Krathwohl et al., 1964) were used to frame the data with excerpts from the observation, interview and document analysis stage to ensure the participant voices were not lost in the interpretation phase (Hatch, 2002). The combination of interpretation and

participant voice allowed a generalizable pattern to emerge that was specific to this research (Hatch, 2002). It was found that the contextual framework was inadequate to explain the complexity of the participants' experience. This inadequacy of the contextual framework led to the creation of a theoretical model (Hatch, 2002) that I have termed the *Affective Nature Connection Matrix* and a description of initial teacher educators affective connection with nature experience called the *Affective Nature Connection Wave and Heartbeat*.

## **Ethics**

Ethical approval for this research was sought from and granted by the University of Tasmania's Human Research Ethics Committee. Ethical approval was granted in February 2016 with the approval number H0015490. A number of ethical considerations were taken into account before the approval of this research was granted, these included: Pseudonyms assigned to each of the consenting selected participants to ensure anonymity to the public. The participants however remain identifiable to each other due to the descriptive accounts of critical incidents in the findings and discussion chapters. All files will be held securely for a period of 5 years following the publication of reports or articles resulting from data generation and then securely destroyed. Electronic files will be deleted from computer hard-drives and servers, and electronic "rubbish bins" emptied and paper documents will be securely shredded. On the wilderness expedition itself only those initial teacher educators who consented to participate were included in the research trip notes. Any photographs taken on the expedition were of consenting participants or natural landscapes. The Unit Coordinator for the Outdoor Education specialization unit with a wilderness expedition where the research participants were sourced from is also the principal supervisor of this research. To negate any possible power relationships occurring, the Unit Coordinator did not have access to the data or know who was participating in the research until

all grades for the unit were submitted to the Faculty of Education and returned to the participants.

### **Summary**

This methodology chapter has outlined the epistemological paradigm, research design, research methods and ethical implications of the study on initial teacher educators' experience of connection with nature in the affective domain during a wilderness experience. The following findings and discussion chapters will elaborate further on the data analysis and the generalizable interpretation of data that allowed a theoretical model of the *Affective Nature Connection Matrix, Wave and Heartbeat* to be built.

### **Chapter Four: Findings**

This findings chapter presents the data collected to answer the research question: *How do Outdoor Education initial teacher educators' in an Australian university, experience nature connection in the affective domain whilst on an extended wilderness expedition?* The data collected were in the form of my own expedition journal, semi-structured post expedition interviews and the participants' expedition journals. The data presented in this chapter consists of a chronological description of the expedition and thematic findings from the interview transcripts. The chronological description utilizes my journal as a guide to the events and activities that occurred during the expedition. The thematic findings were produced by coding four randomly chosen participant interviews, and are presented in increasing complexity through the themes: (1) Attitudes; (2) Values; and (3) Beliefs (Saldaña, 2009). The participant journals were used primarily in the discussion chapter to verify my findings. Throughout the chapter, my journal excerpts are presented in *italics* and participant voice is presented in "quotations". Additional information on lessons and activities can be found in Appendix I.

#### **Participant description**

The participants of this research were purposefully criterion sampled (Patton, 2002) in order to meet the research question and aims of the study. They were all initial teacher educator at an Australian university specialising in Outdoor Education. Out of the original sample size of seven, two male and two female participant interviews were chosen at random to be transcribed, analyzed and coded. The pseudonyms given to the participants were: 1) Linda, 2) Mel, 3) Tom, 4) Adam. The participants were aged between 18 and 30 and were at various stages of their education degree. They had a variety of wilderness experiences ranging from overnight or two

day expeditions to longer 12 day expeditions, however no participants had experiences of off track navigation or been to the Walls of Jerusalem before this expedition.

### **Chronological description of the expedition.**

**Day One.** The agenda for day one was to drive to the Walls of Jerusalem car park and walk approximately six kilometers to the Wild Dog Creek campsite. Lessons completed throughout the day were the history of the Walls of Jerusalem national park and Tasmanian Aboriginal history in the central plateau area. The skies were mostly clear and there was a slight breeze. Critical incidences observed throughout the day included: walking up Trappers Hut hill, the responses to the Aboriginal history lesson, the difference in participants walking paces, arriving at Wild Dog Creek campsite and the impromptu stargazing after dinner at camp. My Journal for the first day shows that *the participants showed elements of traveling through nature and receiving/responding/valuing of outside stimuli throughout the day. There were also signs of characterization of values throughout the Aboriginal history lesson.*

**Day two.** Day two involved exploration of the Wild Dog Creek Valley area. The morning focused on intentional nature connection activities while the afternoon consisted of mapping and navigational exercises. The weather changed from fine and sunny in the morning to wet and windy in the afternoon, as there were rain and showers from midday to 6pm. The main critical incident for day two was the difference between the participants' attitudes in the morning and afternoon activities. My journal excerpt shows: *Today I saw two distinct participant experiences of affective connection with nature. In the morning I saw a caring for nature and values, internalization and characterization through the stories created and the level of care taken whilst in the field and back at camp. In the afternoon I found it hard to observe any nature connection going on whilst the participants were focusing through the wet and cold on the task of grid*

*references and compass work. This was reflected in the debrief after dinner where most participants express that the morning was more enjoyable because of the freedom and creativity.*

**Day three.** Day three involved packing up camp and walking the four kilometers to Dixons' Kingdom via the Pool of Bethesda, including a solo walk from Solomon's Throne to Dixons' Kingdom. Lessons topics included Pencil Pines, place names in the Walls of Jerusalem and triangulation. The weather on day three was unpredictable with rain showers, wind and sleet in the morning. The afternoon, while sunny, had a cold wind. Rain and snow eventuated with patches of sunshine and clear skies. The evening brought sleet and snow with patches of clear sky. Critical incidences involved the changeable weather pattern, the deep connection and emotion during the lessons, the solo walk and the snow in the evening. My observations reflect the weather and participants' feeling as *day three was an amazing day for affective responses in the participants. I believe the weather, the activities and the place all played an important part in their responses. In the morning I saw a lot of traveling through nature with little care being taken in the cold wind and rain. The lessons gave a chance for participants to connect with nature and most did by showing characterization of care and integration with nature through their actions and responses to the lessons. In the evening most participants showed characterization of care and integration with nature through their expressions, comments and the feeling of contentment as we set up our new camp. The snow may have had an influence on this, although there does seem to be one or two participants who are making negative comments regardless of the situation.*

**Day four.** Day four was composed of activities and lessons in the Dixon's Kingdom area and a walk to the top of Mt Jerusalem. Lessons provided were geology and the preparation for the off track navigation on day five. The participants woke to snow which melted quickly with

rain showers throughout the morning. The afternoon was partly sunny as the rain cleared, with misty showers that passed quickly. The snow on the ground was a clear critical incident as was the walk to the top of Mt Jerusalem. My journal shows *the afternoon walk to Mt Jerusalem was interesting to observe for a number of reasons. Two or three participants wanted a social connection whereas a number of others expressed frustration at this social group and the want and need for an individual connection and the chance to be alone on the mountain top. Two participants also expressed a change in attitude toward the length of the camp by saying "six days felt like a long time at the start but now at the end of day four, six days doesn't feel like enough" and "I want to stay here forever". This to me shows clear signs of outward characterizations of caring and integration with nature.*

**Day Five.** The off track navigation walk of approximately ten kilometers from Dixon's Kingdom to Wild Dog Creek via the Golden Gate was the focus of Day Five. A fauna lesson at Golden Gate before returning to Wild Dog Creek campsite was also included in the afternoon. The weather was cloudy with a few showers, becoming sunny in the afternoon. My journal shows that there were mixed feelings at this point as *I over-heard one participant say about packing up "thank god I only have to do this one more time" but other participants looked genuinely sad to be leaving Dixon's Kingdom.*

**Day six.** Day six was the last day of the expedition. The plan was to walk out to the car park via Golden Gate, George Howes Lake and Trappers Hut, with a flora lesson in the morning and a history of the Huts in the Walls of Jerusalem National Park on the way out. There was mist and some showers with sunshine in the afternoon. A critical incident observed on the last day was the togetherness displayed by the group, juxtaposed against the mixed feelings in the group about leaving. My journal explains that *the walk out was a tale of two groups; one group was*



*taking their time and enjoying the walk out and another group just wanted to get to the bus and go home. I'm left with the thoughts that maybe some of the participants could have stayed a few more days and that some were both happy and sad to be leaving. The participants over the whole day showed a range of affective and connection with nature characterizations. Overall, [on this final day] I think that the participants' affective connection with nature was a little like a wave with peaks and troughs.*

### **Thematic findings**

**Attitude** – “The way we think and feel about oneself, another person, thing or idea” (Saldana, 2009, p. 89).

**Attitude – Comfort/Discomfort.** The participants spoke of a range of feelings regarding their comfort levels over the course of the expedition. The majority of these comments focused on feelings of growing comfortable. Linda shared that she developed “a special feeling of peace and ‘home’”. Adam spoke of feeling on the last day “pulled away and wanted to stay”, and Mel expressed that feeling comfortable made it easier to connect with nature. This growing comfort contrasted with the nervousness about the unknown that all participants shared at the beginning of the expedition. The weather played a part in participants' discomfort. This was shown through outright expressions such as “rain is annoying” and “happiness with the rain wears off after a while”. However, Mel provided an interesting point by saying “my comfort [or discomfort] was how I felt in the weather not the weather itself”. Complex feelings of discomfort were expressed by Tom through sharing that he was affected “emotionally and mentally” on the walk up the hill on the first day. To Tom, the hill was “a shock to the self” and he felt “emotionally drained” at the end of the day as he finds walking gives him “tunnel vision, trapped in my own thoughts”.

*Attitude – Enjoyment/Irritations.* Most evident in participant responses was their enjoyment of being in nature. Expressions ranged from “Mt Jerusalem is spectacular”, “Solomon’s Jewels is beautiful and amazing” and “Dixon’s Kingdom was my favorite [camp site]” to Tom who emphatically stated that “the place doesn’t need to change; it is beautiful as it is”. The expedition’s lessons and activities were also notable enjoyable moments, as was the social experience of the expedition. Mel spoke of the off track navigation day being “hard but fun” and that she probably would not have attempted the navigation or enjoyed it if she was on her own. The participants’ most notable irritation was their annoyance at other participants on the expedition, expressed through statements such as “the singing was a distraction” and the “others were distracting”. This irritation was observable a number of times throughout the expedition, for example, on the last day some participants felt they were rushed by those who wanted to go home and conversely some felt frustrated at having rest breaks and looking at the map as they “just wanted to leave”.

*Attitude – Connection expressed through reflections.* As the participants reflected on their experiences they revealed two attitudes that were important to experiencing connection with nature in the affective domain. First, barriers to connection with nature, which included personal and physical barriers. Most thought that it “was difficult to take on board when I was distracted by my own problems” and the last day was “hard to connect with thoughts of home”. “Walking up the hill was hard at the time” and the discomfort of doing so “made it hard to look out”. Second, being present on the expedition and having a changing attitude towards the expedition. Linda spoke about a change in perspective “to be more present and enjoy the expedition”, Tom admitted that he “worked hard to find a point of stillness” and Mel expressed that it would have

been “easy for me to just want to be home ... and let that spoil the rest of the trip. But I didn’t want to do that, I wanted to make the most of it while I was out there”.

**Values** – “The importance we attribute to oneself, another person, thing or idea”  
(Saldana, 2009, p. 89).

**Value – Connection with self, others and nature.** The process of coding revealed it was at times impossible to separate the value placed on connection into self, others or nature. For example, Tom combined self and nature by saying that the “mountains made me feel like the smallest thing in the world” and the “pine grove made me appreciate stillness”. Linda, Mel and Adam all spoke about the morning intentional nature connection activities on day two as being their biggest opportunity to connect. Stating that they connected with the self through becoming comfortable with others through the group activities and with nature through having the freedom to explore and create their own stories about Wild Dog Creek Valley. Participants’ value of their connection with nature was audible through expressions of “love” for the whole area and specific places such as “Wild Dog Creek”, “Mt Jerusalem” and “Dixon’s Kingdom”. Appreciation was manifested through statements such as “it was a cool view of the valley and the mountains” and “it was awesome to be in the Walls”.

Through the participants’ level of responses, it was clear that the expedition had not only brought the group together but had bonded them with a sense of “friendship and camaraderie”. Tom felt that the group games, lessons and activities “brought the group together”. Sharing of personal stories and experiences helped participants to see “different sides of people”. Tom regarded group bonding as vital in helping him to connect as “valuing people leads to valuing [the] place”. The value of connection with the self was revealed through participants talking

about their need and appreciation of being alone and quiet with themselves at various points on the expedition. Tom reflected that he would like to learn to be like the place and still in his own life.

**Values – Emotion.** The value placed on emotion by the participants was at times positive and negative. Tom felt the emotion displayed during one lesson detracted from the content of the lesson. Adam on the other hand thought that, although the lesson was “awkward to watch, hard to watch”, he stated that “the emotional side of the lesson was something special to watch”. The emotion displayed inspired Adam to use personal stories in his lesson to “add to the experience ... if I put a bit of emotion into it. It will give it (his lesson) a bit more depth”. Negative emotions were displayed by the participants through the acknowledgement of factors such as, an “emotional home life”, being “challenged with the direction of my life” and the Tasmanian Aboriginal history lesson which was “confronting and challenging”. The amount of negative emotions expressed paled in comparison to the amount of positive displays of emotion throughout all of the interviews. Descriptors included “love”, “bonding”, “special times”, “appreciation”, “friendship and camaraderie”, “togetherness”, “awesome” and “it felt like we accomplished something amazing”. These superlatives were in regards to a wide range of places, activities and events across the entire length of the expedition.

**Values – Places and nature.** Two distinct values of places and nature became evident throughout the interviews. First, the participants showed an appreciation of places and nature. Linda showed an appreciation of place through acknowledging that “humans can have an impact on the wilderness even when they are not there”, while Tom summed up the expedition by saying their experiences were “something to take away as a memory”. Second, the impact of the lessons and activities were undeniable in influencing the participants’ level of connection with nature.

Linda spoke of the intentional nature connection activities “focused on place” and the creative “story enforced connection to place”. Adam shared that while getting to know a tree was a new experience for him, he could nonetheless remember his tree describing its touch, smell and how it made him feel. Mel recognized that each person will value and enjoy places differently and that there are conflicting ways of enjoying places. Linda concluded that “different places can make you feel” different things.

***Values – Faith and religious belief.*** A small but influential portion of the interviews contained the value participants placed on faith, God, and their religious belief. All participants spoke of God or religion at some point in the interviews. Adam stated that while he did not understand religion or how someone could believe in certain ways, he nonetheless found the display of faith during one lesson influential. Tom spoke of standing on Mt Jerusalem was like “saying thank you to God” and Linda felt that the Walls of Jerusalem was a “reminder of her faith”. Mel also spoke about needing time alone to read her bible when she was missing home.

**Beliefs** – “Values and attitudes, plus our personal knowledge, experiences, opinions, prejudices, morals, and other interpretative perceptions of the social world” (Saldana, 2009, p. 89-90).

***Belief – Connection and relationship with self, others and nature.*** Strong personal belief systems were shared by the participants surrounding their beliefs on connection with themselves, connection with others and connection with nature. The depth of participants’ belief surrounding connection with self, others and nature was on display through statements such as Tom’s “connection with people helps [with] connection with place”. Adam went on to explain connection with nature like having a “relationship and friendship with nature”. Linda reiterated

this as she spoke in detail about the difference between a “social connection with nature” and an “emotional connection with nature”. An emotional connection according to Linda is similar to a “human to human relationship” and it is very special to get to know a “place intimately”. Linda admits that the connection “is not as strong after leaving”, but the act of “leaving after connecting “is like breaking up with a lover”, the “separation is felt as deeply as an intimate relationship”.

All participants expressed personal beliefs about connection. Connection with specific places such as Mt Jerusalem, while experienced differently by each participant were explained in a similar fashion, for example; Mt Jerusalem can “speak for itself”. Linda spoke clearly about her desire to “be integrated with nature” not only while on expedition but also in her everyday life, and Adam believes that developing a connection with nature, “needs to be experienced, it can’t be understood from books”. Connection with self was described plainly by Mel who said you “need to look after yourself before [other] connection is possible”. Understanding others connection and love for places was evident in Adam’s description of the path down into Dixon’s Kingdom, saying whoever made that path “must actually love that bit of the walk to take the time to build that”. Adam also expressed the sentiment that knowing the group “makes it easier to focus and enjoy the expedition”. The connection was built according to Mel and Linda through activities such as gratitude sharing, as gratitude “built connection to people”.

***Belief – Emotion.*** Participants’ beliefs regarding emotion were manifested in a number of ways. First, and most easily recognized, were the expressions of emotions throughout all of the participants’ interviews. For example, Adam felt “proud and accomplished” at the end of the expedition, while Mel had “mixed emotions about leaving” as she was “sad to leave but happy for the experience”. Second, was the positive and negative influence that emotion had on their

ability to connect. Tom was most vocal about the negative impact of emotion, saying that at times it was hard to do simple tasks due to being tired or irritated. Adam on the other hand was emphatic that the lesson which stood out for him was the lesson with the most emotion. Third, was the terms used by Linda and Mel of “emotional connection” with place or nature. Mel disclosed that “being alone on Mt Jerusalem was an emotional connection”. Linda spoke concisely about her belief that “some people like social connections, some people seek emotional connections” and that an “emotional connection [to nature] is very important” to her. She said that her experience of Mt Jerusalem was an “intimate and deeper emotional connection” as opposed to the “social connection” of the off track navigation day.

### **Summary**

This findings chapter presented qualitative data using my observational journal as a chronological description of the expedition, and the outcomes of the interview transcription and coding process, to present four Outdoor Education initial teacher educators' experience of nature connection in the affective domain whilst on an extended wilderness expedition. It shows an increasing complexity of affective attitudes, values and beliefs over the course of the expedition. The following discussion chapter will use the relevant literature to discuss and explain further the participants' experiences of nature connection in the affective domain, before introducing a matrix of participant experience and the *Affective Nature Connection Wave and Heartbeat*.

## **Chapter Five: Discussion**

The aim of this research is to understand initial teacher educators' affective experience of connection with nature on a wilderness expedition. In order to do so it posed the question:

**How do Outdoor Education initial teacher educators' in an Australian university, experience nature connection in the affective domain whilst on an extended wilderness expedition?**

Two theoretical perspectives were used to frame the research. One from a nature connection viewpoint and one from the affective domain. The research proposed that there was a connection between the levels of the key signposts to human relationships with nature (Martin, 2005) and the affective domain taxonomy (Krathwohl et al., 1964) that could help explain Affective Nature Connection. For example, an individual displaying Integration with Nature (Martin, 2005) would be showing an outward characterization of their value complex (Krathwohl et al., 1964) through their actions in relation to nature connection such as displays of emotional connection to a landscape or place in nature.

This chapter discusses the participants' affective experience of nature connection through the introduction of the Affective Nature Connection Matrix. The Affective Nature Connection Matrix allows a holistic perspective to be maintained while explaining the intricacies of initial teacher educators' experience of affective connection with nature. Through the Affective Nature Connection Matrix, affective examples of: Traveling through Nature; Caring for Nature and; Integration with Nature will be given before establishing an overall explanation of initial teacher educators' experience of Affective Nature Connection on a wilderness expedition. The chapter



concludes with a discussion of the context of the research in the larger picture of Outdoor Educational teaching practice.

### **Connection with Nature and Affective Domain**

The theoretical perspective of this research was based upon two separate but compatible constructs, the key signposts to human relationships with nature (Martin, 2005) and the affective domain taxonomy (Krathwohl et al., 1964). The research was founded on calls from both Outdoor Education and affective domain areas of research into the subjective and specific experience of students in a learning environment (Rosiek, 2003; Wattchow & Brown, 2011). In this research, connection with nature is defined as initial teacher educators' individually subjective experience of nature on a wilderness expedition, while the affective domain is understood to mean the domain of feeling, values, emotions, beliefs, and attitudes. As shall be discussed, the findings show that together the two theoretical perspectives creating the contextual framework can be combined to create an Affective Nature Connection Matrix.

### **The Affective Nature Connection Matrix**

Through the research findings it became apparent that the initial contextual framework (see Figure 2.1, p. 15) was not detailed enough nor ideally suited to explain the complexity that constitutes individually subjective Affective Nature Connection across the whole of a wilderness expedition. It also became clear that the original idea of each key signpost corresponding with affective domain level(s) was not supported by the findings, rather, the findings showed that participants displayed the whole of the affective domain taxonomy (Krathwohl et al., 1964) in each of the key signposts to human relationships with nature (Martin, 2005). Figure 5.1. is the combination of the affective domain taxonomy (Krathwohl et al., 1964) and the key signposts to human relationships with nature (Martin, 2005) during a six-day wilderness expedition. This

demonstrates, as will be further explained, that each of the affective domain taxonomy (Krathwohl et al., 1964) were inextricably met in each of the key signposts to human relationships with nature (Martin, 2005) during the expedition and is designed to show that the participants displayed at different times characterization by a value or value complex (Krathwohl et al., 1964) in each of the separate key signposts to human relationships with nature (Martin, 2005).

Integrated with Nature	Characterization					
	Valuing/Internalization					
	Receive/Respond					
Caring for Nature	Characterization					
	Valuing/Internalization					
	Receive/Respond					
Traveling through Nature	Characterization					
	Valuing/Internalization					
	Receive/Respond					
	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6

*Figure 5.1: Affective Nature Connection Matrix.*

The creation of the Affective Nature Connection Matrix is congruent with Martin's (2005) statement that over time his participants shifted their perspectives across the signposts and Krathwohl et al's (1964) notion that students will move their focus or differentiate between a separate "phenomenon, characteristic or value" (Krathwohl et al., 1964, p. 33) as and when it captures their affective attention.

The Affective Nature Connection Matrix creates a synthesis between the affective domain taxonomy (Krathwohl et al., 1964) and the key signposts to human relationships with nature (Martin, 2005). It was created in order to explain holistically the intricate and complex affective connection with nature experience of initial teacher educators on a wilderness expedition. The following examples given in support of the Affective Nature Connection Matrix, focus on either individual days or the expedition as a whole and, individual participants or the whole cohort. The examples also target the observable and reported characterization by a value or value complex (Krathwohl et al., 1964) as this level of the affective domain taxonomy (Krathwohl et al., 1964) was most notable throughout the findings.

**Affective Traveling through Nature.** Evidence of Affective Traveling through Nature was found predominantly when participants were engaged in activities that involved physical movement. Discomfort was characterized by the physical and emotional stresses that are inherent in a wilderness expedition, such as feelings of nervousness about the unknown and feelings of wanting to be at, or go home. Three participants reported that while they had thoughts and feelings of wanting to appreciate their surroundings and having awareness of being in a place of great beauty, it was difficult to do so whilst undertaking an activity that required considerable physical effort. These times of inner reflection and feelings of difficulty in looking out of themselves were highlighted during the first day, the last day and at times of discomfort with their situation. Juxtaposed against the feelings of pain and discomfort were the feelings of achievement from traveling through nature. Participants reported feelings of achievement at getting to the top of Mt Jerusalem, completing the off track navigation challenge and, generally being able to be physically present in the Walls of Jerusalem National Park. Adam summed up

the feelings of participants by stating that he felt “proud and accomplished” at what he and the group had achieved over the expedition.

The data revealed that overall the participants felt that they were traveling through nature on the first day and the last day. Feeling that their minds were still at home and they were in some discomfort and pain on the first day. Similarly, on the last day while some wanted to savour the experience the general feeling was that the expedition was over and it was time to go home.

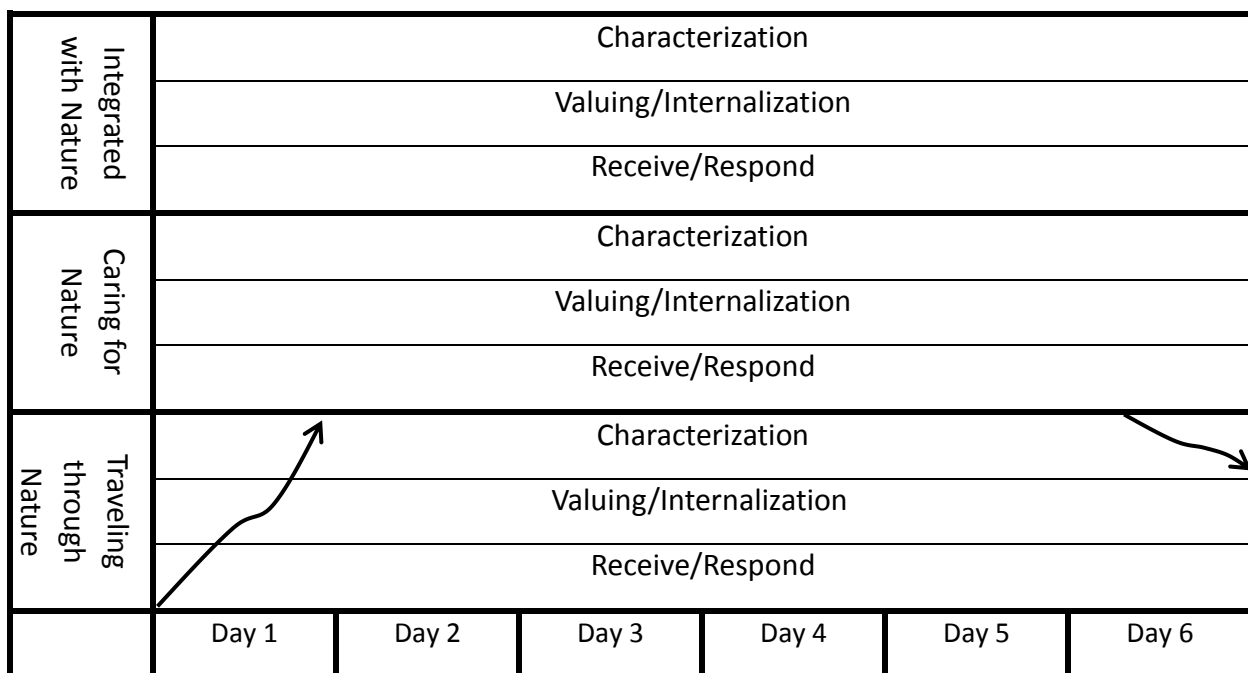


Figure 5.2: Affective Traveling through Nature.

To explain this data trend Figure 5.2 shows an increase and a decrease of Affective Traveling through Nature over the first and last days.

The act of connection with nature during periods or opportunities of traveling through nature was also reported by all the participants. Most notably the wandering and story lines activity provide an arena for deep nature connection though an activity that involved traveling

through nature. Linda explained that she “found that it was in that spot where I think that was the biggest opportunity to connect with nature on the entire trip”. Tom also expressed an appreciation of his connection with nature gained through the wandering activity by stating that he wished the activity was repeated in Dixons’ Kingdom so that he could know and understand Dixon’s Kingdom as well as he got to know Wild Dog Creek valley.

The participants experience in Affective Traveling through Nature reflects Martin’s (2005) descriptions of those who are Traveling through Nature. While nature is believed to be significant (Martin, 2005) as shown through participants’ feelings of achievement and acknowledgment that they were in a ‘special place’, there were times, namely when in discomfort, when “expressions of care for nature” were absent (Martin, 2005, p. 38). Affectively the participants whilst traveling through nature showed evidence of moving through the levels of the affective domain taxonomy (Krathwohl et al., 1964). During the wandering activity participants overcame a reluctance to the activity and showed a willingness to receive and responded positively to the stimulus provided by the activities. This “willingness to respond” (Krathwohl et al., 1964, p. 179) reflects the growing value placed upon the activity by the participants, which in turn appropriated a desire to either repeat the activity or connect deeply with Wild Dog Creek Valley. This desire showed an outward characterization (Krathwohl et al., 1964) as a result of the activities stimulus.

**Affective Caring for Nature.** Participants affective experiences of Caring for Nature was primarily exhibited through their increasing levels of comfort and care shown for themselves, others and nature. In his paper, Martin (2005) describes that those who can be categorized as Caring for Nature arrive at this signpost by the way of “personal experiences” (p, 40) that increase their “emotional connection to nature” (p, 41) and “desire to care for nature” (p. 41).

Evidence of participants Caring for Nature was found in all participants through their repeated expressions, synonyms and use of the word love. Love was expressed in some way by all participants in regards to either specific places, activities, experiences or for their fellow participants. The participants love and care for nature was most tangible in the middle part of the expedition from day two onwards. As a cohort they expressed that they valued the time given to discover and get to know places intimately. There were comments from all participants describing the want and need to slow down and appreciate their surroundings, a wanting and needing to care for nature. Tom was very clear about this need when describing his emotional experience of the solo walk to Dixon's Kingdom on day three.

I think it was needed for me as we had been together so long as a group ... we needed that time apart. I distinctly recall the fact that I lifted my head rather than look to the ground. This allowed me to slow down a little bit, slow the world down and appreciate what was around me. Needs to be done every now and then and we don't do it enough ... For me walking down, it was so beautiful and so still and so quiet, and that idea of stillness I need to take away. I took that away from the place and I need to apply that to my own life.

Tom's statement is just one example of the care taken by participants and the expressions of love expressed by all the participants. Figure 5.3 reflects these findings by showing a steady increase of caring for nature from the beginning of the expedition through to day five.

Integrated with Nature	Characterization					
	Valuing/Internalization					
	Receive/Respond					
Caring for Nature	Characterization					
	Valuing/Internalization					
	Receive/Respond					
Traveling through Nature	Characterization					
	Valuing/Internalization					
	Receive/Respond					
	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6

Figure 5.3: Affective Caring for Nature.

This care and appreciation of specific places is a demonstrable outward characterization of the internal value (Krathwohl et al., 1964) that participants came to place on the areas that they connected with. It also extends the “willingness to respond” (Krathwohl et al., 1964, p. 179) to stimulus beyond that exhibited in Affective Traveling through Nature into a deeper affective connection with nature.

**Affective Integrated with Nature.** Proportionally over the three observed and reported key signposts, participants were either observably leaning towards or locating themselves in an Integrated with Nature characterization. As shown by the findings, there were increasing levels of complexity in participants’ affective integration with nature. The data revealed that emotional and social connection, feelings of intimacy and the development of relationships, and times of feeling most connected with nature was from day three through to the end of the expedition.

Integrated with Nature	Characterization					
	Valuing/Internalization					
	Receive/Respond					
Caring for Nature	Characterization					
	Valuing/Internalization					
	Receive/Respond					
Traveling through Nature	Characterization					
	Valuing/Internalization					
	Receive/Respond					
	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6

Figure 5.4: Affective Integrated with Nature.

Figure 5.4 reflects this increasing complexity by showing a peak experience of Affective Nature Connection from day three onwards, before the shift of focus towards home at the end of the expedition.

Affective Integration with Nature was manifested simply in the first instance through their increasing comfort level in a wilderness setting across the whole of the expedition. All of the participants expressed that they could have or wanted to stay longer in the Walls of Jerusalem. Linda stated that the areas she connected to deeply and intimately became “a special feeling of peace and home” and “I felt really at home and comfortable”. More complex evidence of characterization of affective integration with nature came through participants discussing a lesson on fauna. While all participants described similar sentiments, Linda summed up the



feeling of the group by saying “the biggest thing for me is awareness and creating awareness for all the wildlife that don’t have voices”. These sentiments are in line with Martin’s (2005) explanation that those who are Integrated with Nature feel a oneness and unity with nature that influences their everyday life.

A further description of being Integrated with Nature is an “eco-erotic” or “sensuous relationship with nature” (Martin, 2005, pp. 44-45). Intimate and emotional characterizations of Affective Integration with Nature came directly through conversations and reflections on participants’ views of connection with nature and their subjective individual relationships with nature. For example, Adam shared a deep insight into his view of what nature connection means to him:

Forming a relationship with an area is how I interpret it. A normal relationship with a person you know what they look like, how they sound and how they talk, sometimes if you’re really creepy you know how they smell. So connection to nature is the same sort of thing. You know how they sound and smell and feel. Friendship even, friendship with nature ... I don’t know if we really give back much to nature I think we just sort of, nature is there and we sort of travel through it, we don’t really give much to it, in fact we probably take away from it coz we make tracks and stuff.

Linda shared similar sentiments to Adam in terms of forming a deep intimate relationship with nature while considering how she felt to be leaving the Walls of Jerusalem national park.

I didn’t want to go. I wanted to go back to Dixon’s ... I felt like I don’t want to leave this place I just feel really comfortable here right now. I wrote about that in my journal I thought it was so you know whilst most of the group was so like yay we are going home, shower,

pizza, I was like yeah I could do another couple of days ... It felt almost sad to leave. You've developed this relationship with this area and you're breaking it up.

David. Breaking it up?

Hmmm, yeah you know, I believe you will always have a connection but I believe that it is probably not as strong once you are out of the place, not something you are constantly aware of. It's kind of like having a lover and when your together everything's good and when you break up you might see them around a little bit and you have that little tingle or tinge and then you know for some reason you get back together and go back to the place and it goes again and it works. It a relationship just not with a person.

These two examples reflect the participants' ideas of the possibility of having a deep and intimate relationship with nature, showing outward characterizations that are representative of a deeper set of internalized values (Krathwohl et al., 1964) of the participants' experience of Affective Nature Connection on a wilderness expedition.

### **The Affective Nature Connection Wave and Heartbeat**

Critical incidences such as the ones described above were revealed throughout all of the data gathered on the participants' experiences of Affective Nature Connection. When viewed holistically together, the combined critical incidences of Affective Nature Connection experiences produced two separate but overlapping models of Affective Nature Connection. The critical incidences and Affective Nature Connection Matrix combine to show how the data revealed these two models. The Affective Nature Connection Wave and the Affective Nature Connection Heartbeat. Figure 5.5 shows a holistic view of the participants' Affective Nature Connection in its entirety across the Affective Nature Connection Matrix.

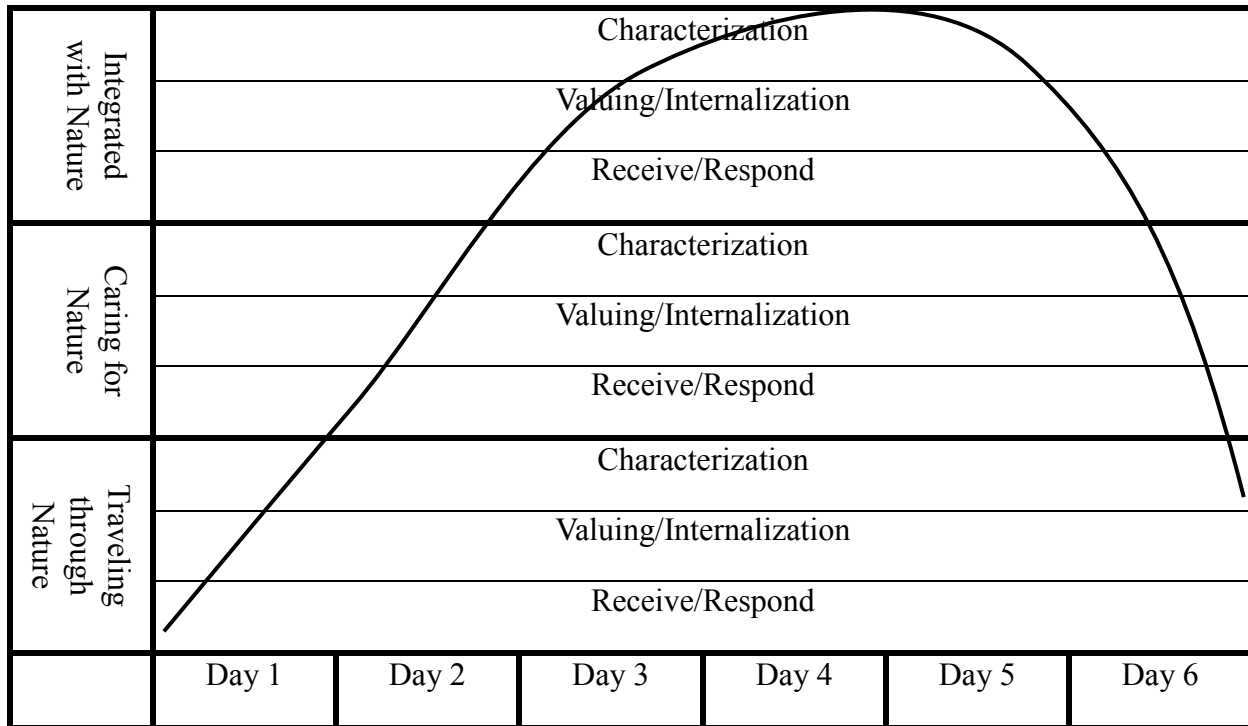


Figure 5.5: The Affective Nature Connection Wave.

The Affective Nature Connection Wave is the visual representation of the combination of Affective Traveling through Nature, Affective Caring for Nature and Affective Integration with Nature and is the resultant of a generalizable pattern emergent from the holistic analysis of participant findings.

The Affective Nature Connection Wave does explain the participants' affective experience of nature connection over the course of a wilderness expedition. It does not however explain what led to the Affective Nature Connection Wave. Critical incidences such as the expedition leader led wandering and storylines activity and the student led aboriginal, place name, pencil pine and huts lessons, as well as times to be personally alone in the wilderness revealed themselves to be the heartbeat of the expedition. Figure 5.6 is a diagrammatical

representation of the spikes in the participants' level of affective connection which led to the peak of Affective Nature Connection from day three onwards of the expedition.

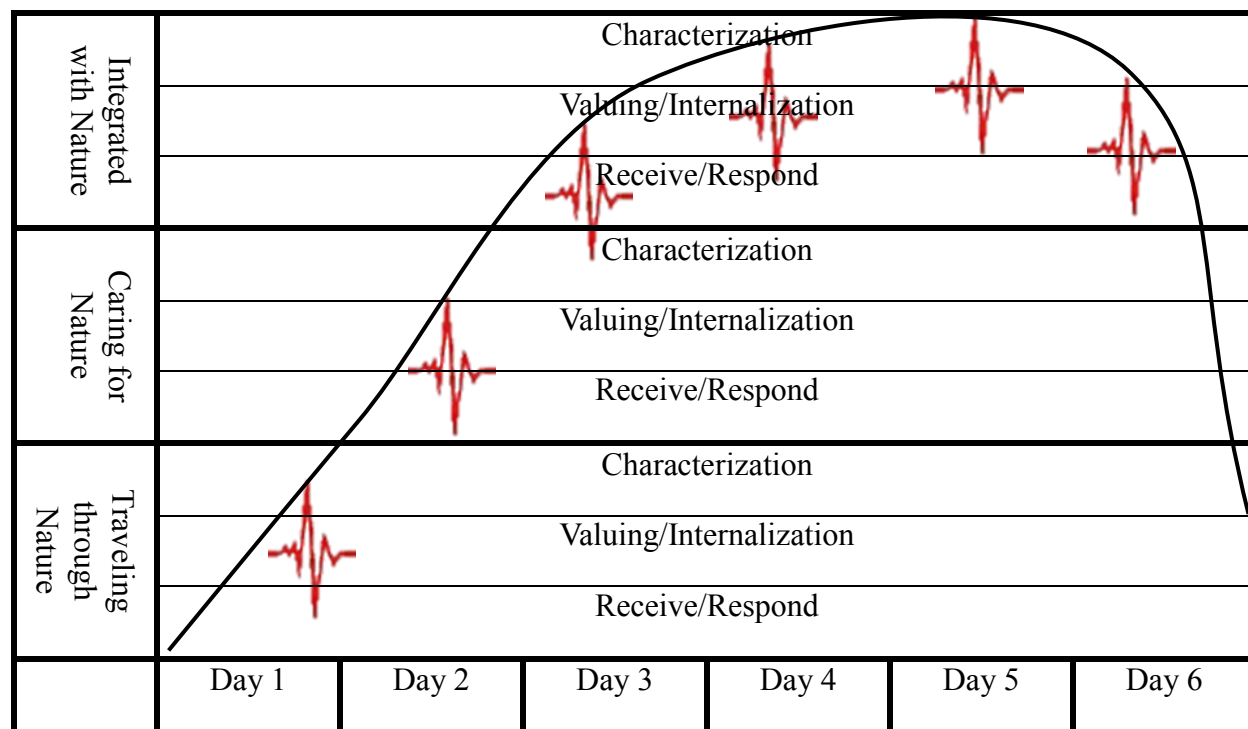


Figure 5.6: *Affective Nature Connection Heartbeat.*

These heartbeat activities across all days of the expedition facilitated the nature connection wave and without them the deep and intimate relationships formed by the participants would not have been possible or if they were possible not as profound.

### The Learning Context and Looking Deeper into the Bigger Picture

The evidence given above for the creation of the Affective Nature Connection Matrix and the accompanying Affective Nature Connection Wave and Heartbeat need to be kept in context to the learning environment in which they occurred. This is in line with Rosiek's (2003) statement that there has been a "lack of scholarly attention to the practical work of helping students build emotional, as well as cognitive, relations to what they are learning" (p. 410). The findings

provided by the Affective Nature Connection Matrix and the subject specific (Rosiek, 2003) and place specific (Wattchow & Brown, 2011) focus of this research provides concrete evidence of affective learning outcomes in a cognitive learning environment. This combination extends the idea of outdoor educators focusing on “teaching the whole student” (Knapp, 1989, p. 41) to include a Post Neo-Hahnian ecocentric perspective that attends to the ways places in nature can affect human feelings and our need for a reciprocal caring attitude towards nature (Martin, 2007).

If, as the findings and literature suggest, students can learn Affective Nature Connection, then this research provides an insight into a way of negating the false dichotomy prevalent in the common discourse surrounding human relationships with nature (Bratman et al., 2012; Greer, 2010; Vinning et al., 2008). The learning of Affective Nature Connection also speaks to Buissink-Smith et al.'s (2011) assurance that the skills and knowledge learnt by students to combat the social and environmental crises (Quay, 2016; Tam, 2013a, 2013b; Zylstra, 2014) are used in the future because of “affective, rather than cognitive” (Buissink-Smith et al., 2011, p. 102) influences. The negating of the false dichotomy and the teaching of Affective Nature Connection could provide a way for the affective domain and environmental sustainability aspects of the Melbourne declaration (MCEETYA, 2008), Australian curriculum (ACARA, 2016) and UNESCO's 21<sup>st</sup> century essential learning guidelines (Rosiek, 2003) to be combined in order for Outdoor Education learning outcomes to explicitly target the environmental crisis (Quay, 2016; Tam, 2013a, 2013b; Zylstra, 2014) and the health benefits of Nature Connection (Alcamo et al., 2003; Capaldi et al., 2014; Mallar et al., 2009; Richardson et al., 2016). Meaning that students who are taught Affective Nature Connection have the potential to make considered affective choices in regards to acting in personal, social and environmentally healthy ways, as well as cognitive ones (Adolphs & Damasio, 2000; Smith & Kirby, 2000).

**Summary**

This chapter has described the individual and holistically subjective experiences of Affective Nature Connection through the creation of the Affective Nature Connection Matrix. Through the Affective Nature Connection Matrix, a description of holistic perspective of the intricacies of initial teacher educators' experience of affective connection with nature was given, with reference to, the key signposts to human relationships with nature (Martin, 2005) and the affective domain taxonomy (Krathwohl et al., 1964). The chapter concluded with a discussion of the literature and the research findings as a reminder of the larger context of the research and Outdoor Education's shifting paradigm. The conclusion chapter will detail the outcomes, significance and implications of this research along with the applications, limitations and recommendations for future research.

## Chapter Six: Conclusion

In this research, I investigated initial teacher educators' affective responses of nature connection, by the means of a qualitative naturalistic case study inquiry. The research asked: *How do Outdoor Education initial teacher educators' in an Australian university, experience nature connection in the affective domain whilst on an extended wilderness expedition?* The aims of the research, to understand Affective Nature Connection, as well as having great personal significance, were justified in response to a number of factors, namely calls from both sides of Outdoor Education and affective domain research for inquiries into the subjective experiences of students in specific subjects or places. The literature review also allowed a contextual framework to be developed, upon which the following methodology, findings and discussion chapters grew to bring forth the theoretical model of the Affective Nature Connection Matrix to explain holistically the participants' experiences. In this chapter I summarise the key findings, highlight the significance, outline the limitations and set forth the implications of this research, before recommending avenues of future Affective Nature Connection research.

### Key Findings

The holistic analysis of the four Outdoor Education initial teacher educators' Affective Nature Connection experiences on a six-day wilderness expedition revealed that whilst there were individually subjective experiences that separated the four participants, there were importantly a generalizable trend amongst the participants. In order to explain this generalizable trend, the original contextual frame work was found to be unsuitable and was expanded into a matrix of a six-day Affective Nature Connection experience. This matrix allowed the Affective Nature Connection Wave and Heartbeat to be revealed through the qualitative analysis of my own observations, participant interviews and participant journals. Central to the power and depth of

the Affective Nature Connection Wave and Heartbeat, were the participant's intense affective experiences of the activities and lessons over a short period of time.

### **Limitations**

A number of limitations and influencing factors were inherent in this research and should be noted. First, all the participants had an acknowledged level of positive nature connection before the beginning of the expedition. This preexisting level of comfort of the outdoors is to be expected from a cohort of Outdoor Education initial teacher educators. However, this preexisting connection with nature was not deemed to be a negatively influencing factor as none of the participants' had visited the Walls of Jerusalem National Park prior to expedition. Second, was my own influence on the participants' experience as an observer participant on the expedition. While all efforts were taken not to influence the participant experience on my part it was inevitable that I did in some way influence the participant experience due to my presence on the expedition. Third, all the participants were Australian citizens aged between 18 and 30. This demographic would invariably have an influence on the participants' responses, outlooks, beliefs and values, as well as influencing the relationships between individual participants.

### **Significance**

Regardless of the limitations, this research is significant for a number of reasons. First, this research is multifaceted in that it draws on two different but overlapping areas of research which provide depth and relevance to the research question, methods, findings and implications. Second, in regards to humanity's survival into the future. The importance of nature connection to human happiness has been stated as being on par with other factors such as income and education (Capaldi et al., 2014). While a dichotomy of a human and nature relationship may exist (Greer, 2010) it is a biological reality that humans are dependent on natural living system



for their continued existence of this planet (Greer, 2010; Tam, 2013b). Therefore, human relationships with nature is worthy of research and attention. Third, this research is noteworthy for the areas of Outdoor Education and affective domain teaching. This research responds to the call of past research in both areas which have asked for further inquiry into student specific subjective responses and experiences (Rosiek, 2003; Wattachow & Brown, 2011).

The fourth significance is particular to the affective domain in Outdoor Education. As there was virtually no research found on the affective domain and Outdoor Education, this research has the potential to open up avenues for future research into the pedagogical potential of Affective Nature Connection in Outdoor Education. Fifth, the research is meaningful in that it adds its own substance to the argument that the cognitive, affective and psychomotor domains, should not and in some cases cannot be separated. In turn confirming the argument for a focus on affective education in 21<sup>st</sup> century education more broadly. Lastly, the research is personally significant in that it shows that my personal experience of nature connection is not a standalone experience and that other people feel as deeply connected with the wilderness as I do.

### **Implications**

The implications and recommendations for future research in the Affective Nature Connection area threefold. First, exploration of the pedagogical implications in the area of Outdoor Education and the progression of the paradigm shift into Post Neo-Hahnism. Second, more broadly inquiring into the Australian Curricular implications in terms of specific subject areas, the general capabilities and cross curricular priorities. Third, policy implications in response to the affective language used in the Melbourne Declaration of Education Goals for Young Australians and its flow on effect on the previous two implications.

**Pedagogical Implications.** If Western-Eurocentric Outdoor Education is moving from a period of infancy to a period of adolescence (Nicol, 2014), then along with the copious number of articles critiquing Hahian derived Outdoor Education must ultimately mean that Western-Eurocentric Outdoor Education is indeed undergoing a paradigm shift. This shift, that through this study, has been termed Post Neo-Hahnism moves the teaching of Outdoor Education from an anthropocentric point of view to an ecocentric viewpoint. In line with this ecocentric standpoint is the understanding that places and nature have feelings, personalities and are effected by the way humans interact with them. If we are to return the reciprocal relationship between humans and nature (Martin, 2007) then we must understand how people feel and experience connections with nature (Wattchow & Brown, 2011). Therefore, the first pedagogical implications of this research shows that University students do feel, value and have deep attitudes about their connection with nature. An extension of this logic means that the teaching of connection with nature is not only possible but can be taught to a deep and intimate level.

Further to the Post Neo-Hahnian paradigm shift is how the Affective Nature Connection Matrix, Wave and Heartbeat could have the potential to provide not only a way of teaching affective connection with nature, but open possible ways for the attainment and assessment of Affective Nature Connection in students. While it has been pointed out that there is difficulty in the assessment of affective learning outcomes (Kals & Maes, 2002), the potential for the use of the Affective Nature Connection Matrix, Wave and Heartbeat in Outdoor Education meet Rosiek's (2003) statement that there is a moral imperative that we teach our students affectively. Therefore, the Affective Nature Connection Matrix could be used as a diagnostic assessment tool in the field by educators who are seeking Affective Nature Connection outcomes to assess if, and where, their students sat on the Matrix, and adjust their teaching strategies accordingly.

**Australian Curricular Implications.** Affective learning in the Australian Curriculum is represented through affective language used in the cross curricular priorities, general capabilities and the subject areas, particularly in the subject of health and physical education. Language such as values, beliefs, emotions are to be found throughout the Australian Curriculum as well as language regarding the interrelatedness and interconnectedness of planetary systems and peoples. This research therefore, has implications for mainstream schooling and not just Outdoor Education students. As outlined in the introduction and above in the pedagogical implications Outdoor Education is experiencing a paradigm shift into Post Neo-Hahnism. In Australia this shifting paradigm is bringing Outdoor Education as pedagogy into mainstream schooling practices. If Affective Nature Connection activities can have such a strong effect on initial teacher educators over a short period, then it can be argued that they also have the potential to influence the learning outcomes of all Australian students if integrated appropriately into the broader curriculum. Affective Nature Connection could be taught through learning outcomes in traditional classroom subjects such as Math, English, Science and the Humanities, to do so would be to find the true potential of Affective Nature Connection education.

**Policy Implications.** The language used in the Australian Curriculum on affective learning and the relationships between humans and the planet reflect the ideals and policies set out by the Melbourne Declaration of Educational Goals for Young Australians and, UNESCO's 21<sup>st</sup> century essential learning guidelines. The policy implications from the outcomes of this research is for Affective Nature Connection learning outcomes to be included in the Australian Curriculum and for Affective Nature Connection pedagogies to be included in future educational policies alongside other established pedagogical practices.

This implication is not to be taken lightly as four important factors have been taken into account to justify this implication. First, the Melbourne Declaration's statement that environmental sustainability is to be "integrated across the curriculum" (MCEETYA, 2008, p. 14). Second, Martin (2008) showed that "proximity is the most powerful determinant of caring behaviour and is a precursor to relatedness" (p. 59). Third, is the paradigm shift of Outdoor Education from an anthropocentric, adventure based subject to an ecocentric place based pedagogy, whilst keeping true to the teaching of students about themselves, others and nature. Fourth, is the findings from this research to the speed, strength and quality of participants' affective connection with nature. Summarised together these four separate pieces of information show that Affective Nature Connection learning outcomes are possible through the changing paradigm by allowing relationships to be formed with the self, others and the natural world, leading to a caring ethic which in turn speaks directly to a key educational outcome of environmental sustainability from a document which the Australian Curriculum was based upon.

### **Recommendations for Future Research**

The recommendations for future research that follow reflect the above implications and finds credence through significance, whilst acknowledging the limitations of this research. First from an Outdoor Education pedagogical perspective is research into how Post Neo-Hahnism Outdoor Education benefits from pedagogical practices that include Affective Nature Connection. As such, there is a need for further research into the potential and effectiveness of Affective Nature Connection in Outdoor Education students learning outcomes. This could be achieved through a repetition of this research with an expansion of the demographic and targeted cohorts. Second, from a general education perspective, further research in this area could ask if Affective Nature Connection pedagogies have the potential to influence positively students'

achievements of traditional learning outcomes in subjects such as Math, Science, English and the Humanities. A third future research focus could be on the applicability and effectiveness of the Affective Nature Connection Matrix on the assessment of students affective learning outcomes in this area. Lastly, research could be conducted into the impact of Affective Nature Connection on individuals' future actions and the motivation the individuals feel towards being affectively connected with nature.

### **Final Thoughts**

This thesis has allowed me to research an area of inquiry that is very close to my heart. It has opened up opportunities and provided dreams for a future that I had not realised. For this I will be eternally grateful. I will end this thesis with a poem that was given to me by a Tasmanian Aboriginal elder during the course of my thesis. I believe it speaks simply and to the heart of Affective Nature Connection and ask you, the reader, to ponder as I do what the anonymous author meant by 'understands'.

The  
  
sky,  
  
a tree,  
  
and man  
  
will survive,  
  
if man understands  
  
the tree.

### References

- Australian Curriculum Assessment and Reporting Authority. (2016, April 15). *The Australian Curriculum* (Version 8.2). Retrieved from <http://www.australiancurriculum.edu.au/>
- Adolphs, R., & Damasio, A. R. (2000). The interaction of affect and cognition: A neurobiological perspective. In J. Forgas (Ed.), *Handbook of affect and social cognition* (pp. 27-45). Mahwah, NJ: L. Erlbaum Associates.
- Alcamo, J., Ash, N., Butler, C., Baird Callicott, J., Capistrano, D., Carpenter, S., . . . Zurek, M. (2003). *Ecosystems and human wellbeing: A framework for assessment*. Washington DC: Island Press.
- Beames, S., & Brown, M. (2013). Enough of Ronald and Mickey: focusing on learning in outdoor education. *Journal of Adventure Education and Outdoor Learning*, 14(2), 118-131.
- Bloom, B. S., Hastings, J., & Madaus, G. (1971). *Handbook on formative and summative evaluation of student learning*. New York, NY: McGraw-Hill.
- Bratman, G. N., Hamilton, J. P., & Daily, G. C. (2012). The impacts of nature experience on human cognitive function and mental health. *Annals of the New York Academy of Sciences*, 1249, 118-136.
- Brookes, A. (2003a). A critique of neo-Hahnian outdoor education theory. Part one: Challenges to the concept of “character building”. *Journal of Adventure Education & Outdoor Learning*, 3(1), 49-62.
- Brookes, A. (2003b). A critique of neo-Hahnian outdoor education theory. Part two: “The fundamental attribution error” in contemporary outdoor education discourse. *Journal of Adventure Education & Outdoor Learning*, 3(2), 119-132.

Brown, M. (2008). Outdoor Education: Opportunities provided by a place based approach. *New Zealand Journal of Outdoor Education: Ko Tane Mahuta Pupuke*, 2(3), 7-25.

Buissink-Smith, N., Mann, S., & Shephard, K. (2011). How do we measure affective learning in higher education. *Journal of Education for Sustainable Development*, 5(1), 101-114.

Capaldi, C. A., Dopko, R. L., & Zelenski, J. M. (2014). The relationship between nature connectedness and happiness: A meta-analysis. *Frontiers in Psychology*, 5, 1- 15.

Creswell, J. W. (2014). *Research design: qualitative, quantitative, and mixed methods approaches*. Thousand Oaks, CA: Sage Publications.

Crotty, M. (1998). *The foundations of social research: meaning and perspective in the research process*. London; Thousand Oaks, CA: Sage Publications.

Cuthbertson, B., Socha, T. L., & Potter, T. G. (2004). The double-edged sword: Critical reflections on traditional and modern technology in outdoor education. *Journal of Adventure Education & Outdoor Learning*, 4(2), 133-144.

Dyment, J. E., & Potter, T. G. (2014). Is outdoor education a discipline? Provocations and possibilities. *Journal of Adventure Education and Outdoor Learning*, 15(3), 193-208.

Fägerstam, E. (2012). Children and young people's experience of the natural world: Teachers' perceptions and observations. *Australian Journal of Environmental Education*, 28(1), 1-16.

Greer, A. (2010). Are humans part of nature? *Quadrant Magazine*, 54(12), 89-92.

Hatch, J. A. (2002). *Doing qualitative research in education settings*. Albany: State University of New York Press.

Iozzi, L. A. (1989). What research says to the educator. Part one: Environmental education and the affective domain. *The Journal of Environmental Education*, 20(3), 3-9.

- Kals, E., & Maes, J. r. (2002). Sustainable development and emotions. In P. Schmuck & P. W. Schultz (Eds.), *Psychology of sustainable development* (pp. 97-122). Boston: Kluwer Academic.
- Kellert, S. R. (2002). Experiencing nature: Affective, cognitive and evaluative development in children. In P. H. Kahn Jr & S. R. Kellert (Eds.), *Children and nature: Psychological, sociocultural and evolutionary investigations* (pp. 117-152). Cambridge, Massachusetts: The MIT Press.
- Knapp, C. (1989). Humanizing outdoor education: Exploring the affective domain. *Journal of Physical Education, Recreation & Dance*, 60(2), 40-43.
- Krathwohl, D. R., Bloom, B. S., & Masia, B. B. (1964). *Taxonomy of educational objectives . The classification of educational goals. Handbook II: Affective Domain*. New York: David McKay Company.
- Leopold, A. (1949). *A Sand County almanac, and sketches here and there*. New York: Oxford University Press.
- Loynes, C. (1998). Adventure in a bun. *The Journal of Experiential Education*, 21(1), 35-39.
- Lugg, A. (1999). Directions in outdoor education curriculum. *Australian Journal of Outdoor Education*, 4(1), 25-32.
- Lugg, A. (2005). Outdoor adventure in Australian outdoor education: Is it a case of roast for Christmas dinner? *Australian Journal of Outdoor Education*, 8(1), 4-11.
- Mallar, C., Townsend, M., St Leger, L., Henderson-Wilson, C., Pryor, A., Prosser, L., & Moore, M. (2009). Healthy parks, healthy people: The health benefits of contact with nature in a park context. *The George Wright Forum*, 26(2), 51-83. Retrieved from <http://www.georgewright.org/262maller.pdf>



- Martin, P. (1996). New perspectives of self, nature and others. *Australian Journal of Outdoor Education*, 1(3), 3-9.
- Martin, P. (2004a). Outdoor adventure in promoting relationships with nature. *Australian Journal of Outdoor Education*, 8(1), 20-28.
- Martin, P. (2004b). *Outdoor Education for Human/Nature relationships*. Paper presented at the Connections and Disconnections: Examining the reality and rhetoric. International perspectives on outdoor education theory and practice, La Trobe University Bendigo.  
[http://www.latrobe.edu.au/education/downloads/martin\\_p\\_human\\_nature\\_relationships.pdf](http://www.latrobe.edu.au/education/downloads/martin_p_human_nature_relationships.pdf)
- Martin, P. (2005). Human to nature relationships through outdoor education In T. Dickson, T. Gray, & B. Hayllar (Eds.), *Outdoor and experiential learning: Views from the top* (pp. 28-52). Dunedin, New Zealand: Otago University Print.
- Martin, P. (2007). Caring for the Environment: Challenges from notions of caring. *Australian Journal of Environmental Education*, 23, 57-64.
- Martin, P., & Thomas, G. (2000). Interpersonal relationships as a metaphor for human-nature relationships. *Australian Journal of Outdoor Education*, 5(1), 39-46.
- MCEETYA. (2008). *Melbourne declaration on educational goals for young Australians*. Melbourne, Victoria: Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA).
- Nicol, R. (2002a). Outdoor education: Research topic or universal value? Part one. *Journal of Adventure Education & Outdoor Learning*, 2(1), 29-41.
- Nicol, R. (2002b). Outdoor education: Research topic or universal value? Part Two. *Journal of Adventure Education and Outdoor Learning*, 2(2), 85-99.

- Nicol, R. (2003). Outdoor education: Research topic or universal value? Part three. *Journal of Adventure Education & Outdoor Learning*, 3(1), 11-27.
- Nicol, R. (2014). Entering the Fray: The role of outdoor education in providing nature-based experiences that matter. *Educational Philosophy and Theory*, 46(5), 449-461.
- Orr, D. W. (2004). *Earth in mind: on education, environment, and the human prospect*. Washington, DC: Island Press.
- Patton, M. Q. (2002). *Qualitative research and evaluation methods integrating theory and practice* (3rd ed.). Los Angeles: Sage.
- Pierre, E., & Oughton, J. (2007). The affective domain: Undiscovered country. *College Quarterly*, 10(4), 1-7.
- Punch, K., & Oancea, A. (2014). *Introduction to research methods in education* (2nd ed.). City Road, London: Sage Publications.
- Quay, J. (2016). From human–nature to cultureplace in education via an exploration of unity and relation in the work of Peirce and Dewey. *Studies in Philosophy and Education* 1-14.
- Richardson, M., Cormack, A., McRobert, L., & Underhill, R. (2016). 30 Days Wild: Development and Evaluation of a Large-Scale Nature Engagement Campaign to Improve Well-Being. *PLoS One*, 11(2),
- Rosiek, J. (2003). Emotional scaffolding: An exploration of the teacher knowledge at the intersection of student emotion and the subject matter. *Journal of Teacher Education*, 54(5), 399-412.
- Saldaña, J. (2009). *The coding manual for qualitative researchers*. Los Angeles, Thousand Oaks: SAGE Publications.

Shephard, K. (2008). Higher education for sustainability: seeking affective learning outcomes.

*International Journal of Sustainability in Higher Education*, 9(1), 87-98.

Shoffner, M. (2009). The place of the personal: Exploring the affective domain through

reflection in teacher preparation. *Teaching and Teacher Education*, 25(6), 783-789.

Smith, C. A., & Kirby, L. D. (2000). Affect and cognitive appraisal processes. In J. Forgas (Ed.),

*Handbook of affect and social cognition* (pp. 76-93). Mahwah, NJ: L. Erlbaum

Associates.

Sobel, D. (1996). *Beyond ecophobia : reclaiming the heart in nature education*. Great

Barrington, MA: Orion Society.

Stake, R. E. (2005). Qualitative case studies. In N. K. Denzin & Y. S. Lincoln (Eds.), *The SAGE*

*handbook of qualitative research*. Thousand Oaks: Sage Publications.

Tam, K.-P. (2013a). Concepts and measures related to connection to nature: Similarities and

differences. *Journal of Environmental Psychology*, 34, 64-78.

Tam, K.-P. (2013b). Dispositional empathy with nature. *Journal of Environmental Psychology*,

35, 92-104.

Vinning, J., Merrick, M., & Price, E. (2008). The distinction between humans and nature:

Human perspectives of connectness to nature and elements of the natural and unnatural

*Human Ecology Review*, 15(1), 1-11.

Wattchow, B. (2001). *Outdoor Education as the Experience of Place*. Paper presented at the 12th

National Outdoor Education Conference, La Trobe University, Bendigo, Australia.

Wattchow, B. (2004). *Lived-experience in outdoor education: Explorations for the educational*

*practitioner / researcher*. Paper presented at the International Outdoor Education

Research Conference, La Trobe University, Bendigo, Australia.

Wattchow, B., & Brown, M. (2011). *A pedagogy of place: Outdoor education for a changing world*. Clayton, Vic.: Monash University Pub.

Yin, R. K. (2014). *Case study research : design and methods* (5th ed.). Thousand Oaks, CA: Sage Publications.

Zylstra, M. (2014). *Exploring meaningful nature experience connectedness with nature and the revitalization of transformative education for sustainability*. (Doctor of Philosophy Dissertation), Stellenbosch University. Retrieved from <http://scholar.sun.ac.za/handle/10019.1/86290>

## Appendix A

### Participant Information Sheet

#### **How are connections to place and nature experienced in the affective domain? An Australian Outdoor Education initial teacher educator case study**

##### **Invitation**

You are invited to take part in a research study that is examining how connections to place and nature are experienced in the affective domain during a University unit with a wilderness expedition component. The affective domain is the “emotional” or “feeling” domain.

This research is being conducted as part of an Honours Research Thesis for the Faculty of Education. David Hayward is the student researcher for this Thesis and is under the direct supervision of Dr. Heidi Smith, Lecturer Teacher Education, Outdoor and Sustainability Education, Bachelor of Education Primary Course Coordinator, Faculty of Education at the University of Tasmania.

##### **What is the purpose of this study?**

The aim of this research is to understand how initial teacher educators emotionally feel as they experience and grow their own connection to specific places in the natural environment. In order to understand a small part of how initial teacher educators experience place connections in the natural environment, the research will be guided by the following overarching question: How do Outdoor Education initial teacher educators' in an Australian university, experience place connections in the affective domain during a wilderness expedition unit? Through the research it is hoped to reach an understanding of what initial teacher educators' emotionally feel in regards to natural environment place connection whilst on a wilderness expedition and gain insights into some of the affective domain pedagogical implications of place connection.

##### **Why have I been invited to participate?**

This study requires the participation of a selected number of Outdoor Education initial teacher educators from The University of Tasmania. Your unit has been selected as it contains a wilderness expedition which is key to the research outcomes and design. Your participation is voluntary and there is no consequence for declining this invitation.

##### **What will I be asked to do?**

As a participant you will be asked to do the following:

- Complete a self-reported key signposts to human relationship with nature form attached to this information sheet. As per consent form.
- Be observed on expedition for events that may lead to place and nature connection as per consent form. The class and individuals will be observed in a discrete manner as possible.
- As per consent form allow the researcher access to your assessed reflections from the expedition for discussion in:
- A one-on-one face-to-face interview between you and the researcher at a public place of your choice (we would recommend a library to allow for a

quiet space for recording of an interview). The interview will be a conversational unstructured interview using the researchers' observations and your own experiences to discuss how you felt at different times and during different activities during the unit. The interview will last approximately 40-50 minutes, will be audio recorded on a handheld recording device and will later be transcribed. The interviews will be conducted toward the end of semester 1 2016. Research participants will also have the chance to see the interview transcript before it is analysed.

**Are there any possible benefits from participation in this study?**

From this study, researchers hope to identify how or if at all the affective domain plays a part in effecting connections to place and nature. Participation in this study may as Outdoor Education initial teacher educators increase awareness of your own and others pedagogical practices in regards to place based education, influencing your own teaching in the future.

**Are there any possible risks from participation in this study?**

We do not foresee any risks from participation in this study, but please let us know if you have any concerns.

On the wilderness expedition itself only those initial teacher educators who have consented to participate will be included in the research trip notes. Any photographs taken on the expedition will be of consenting participants or natural landscapes. The researcher will ask for permission to take the photo before doing so. No photographs of participants will be published in any resulting papers or thesis. Initial teacher educators who do not agree to be a part of the study will not be photographed at any time.

Of those initial teacher educators who agree to participate in the research, between 3-5 participants will be randomly selected to participate. Participants who agree to be involved will not be advantaged or disadvantaged from other participants in the unit in any way. This will be ensured by:

- Pseudonyms will be given to each participant. This will ensure that you are not identifiable to anyone outside of the study/unit. You will only be identifiable to the researchers and your fellow participants. For Example: Specific events that take place on the expedition will be identifiable through the actions of those involved but the names of those involved will have been changed.
- Dr Heidi Smith will not have access to the data until all grades have been submitted to the Faculty of Education at the end of the semester. Therefore, your participation in the research will have no influence on your academic results in this unit.

**What if I change my mind during or after the study?**

You have the freedom to withdraw from this study at any time, until August 2016, and can do so without providing explanation. After August, it is expected that data will have been analysed and included into a research paper and therefore not possible to remove.

Should you decide to withdraw from the project (before August), all data relevant to your participation will be destroyed. Specifically, electronic files will be deleted from computer hard-drives and servers, and electronic "rubbish bins" emptied and paper documented will be securely shredded.

**What will happen to the information when this study is over?**

This study will conclude by December, 2016.

All raw data (which includes observation notes, pictures, drawings, survey forms, interview tapes and interview transcriptions) will be held by the University of Tasmania, School of Education, for a period of five (5) years from the publication of the study results, and will then be securely destroyed.

Interview transcriptions will be stored within electronic files accessed via a password-protected computer within the School of Education at the University of Tasmania. Paper copies used for the qualitative analysis of interviews will be kept in a locked filing cabinet accessible only to the researchers. All data will be accessed only by the researchers. The data will be treated in a confidential manner.

**How will the results of the study be published?**

Results will be published as part of an honours dissertation concluding in December 2016. Summaries and/or the full dissertation will be made available to participants if desired.

You will also be provided with the opportunity to review observation and interview transcripts before they are included in the research paper.

It is also our intention to write and publish an article in the Australian Journal of Outdoor Education, and/or other closely related educational Journals, e.g. Journal of Adventure Education & Outdoor Learning.

As previously stated you will not be personally identifiable in the resulting publication.

**What if I have questions about this study?**

We are happy to discuss any aspect of the research with you. You are welcome to contact us at that time to discuss any issue relating to the research study.

David Hayward: [dhayward@utas.edu.au](mailto:dhayward@utas.edu.au)

Dr. Heidi Smith: [heidi.smith@utas.edu.au](mailto:heidi.smith@utas.edu.au)

Dr David Moltow: [David.Moltow@utas.edu.au](mailto:David.Moltow@utas.edu.au)

This study has been approved by the Tasmanian Social Sciences Human Research Ethics Committee. If you have concerns or complaints about the conduct of this study, please contact the Executive Officer of the HREC (Tasmania) Network on +61 3 6226 6254 or email [human.ethics@utas.edu.au](mailto:human.ethics@utas.edu.au). The Executive Officer is the person nominated to receive complaints from research participants. Please quote ethics reference number H15490.

**Thank you for taking the time to consider this study. This information sheet is yours to keep. If you would like to be a participant in this study, please wait until the researcher have left the room to fill out the attached consent form and survey.**

## Appendix B

### Consent Form

1. I agree to take part in the research study named above.
2. I have read and understood the Information Sheet for this study.
3. The nature and possible effects of the study have been explained to me.
4. I understand that the study involves:
  - Completing a key signposts to human relationship with nature questionnaire.
  - Being observed on expedition for events that may lead to place and nature connection.
  - Providing a copy of my reflective journal from the expedition.
  - A one-on-one face-to-face interview. The interview will last approximately 40-50 minutes, recorded on a handheld audio recording device and will later be transcribed. The interviews will be conducted toward the end of semester 1 2016. I will have the chance to read the interview transcript for clarification and removal of any aspects I do not wish to remain before it is analysed.
5. I understand that the Unit Coordinator is also the Chief Researcher on this study. As such the Unit Coordinator will not have access to the data until all grades have been submitted to the Faculty of Education. Therefore, participation in the research will have no effect on my grades.
6. The student researcher will not know the grades I have received for my reflection.
7. I understand that participation involves no foreseeable risk(s).
8. I understand that all research data will be securely stored on the Faculty of Education, University of Tasmania premises for five years from the publication of the study results, and will then be destroyed
9. Any questions that I have asked have been answered to my satisfaction.
10. I understand that the researcher(s) will maintain confidentiality and that any information I supply to the researcher(s) will be used only for the purposes of the research.
11. I understand that the results of the study will be published so that I cannot be identified as a participant.
12. I understand that my participation is voluntary and that I may withdraw at any time without any effect. If I so wish, I may request that any data I have supplied be withdrawn from the research until August 2016.

Participant's name: \_\_\_\_\_



Participant's signature: \_\_\_\_\_

Date: \_\_\_\_\_

**Statement by Investigator**

☐

I have explained the project and the implications of participation in it to this volunteer and I believe that the consent is informed and that he/she understands the implications of participation.

If the Investigator has not had an opportunity to talk to participants prior to them participating, the following must be ticked.

☐

The participant has received the Information Sheet where my details have been provided so participants have had the opportunity to contact me prior to consenting to participate in this project.

Investigator's name: \_\_\_\_\_

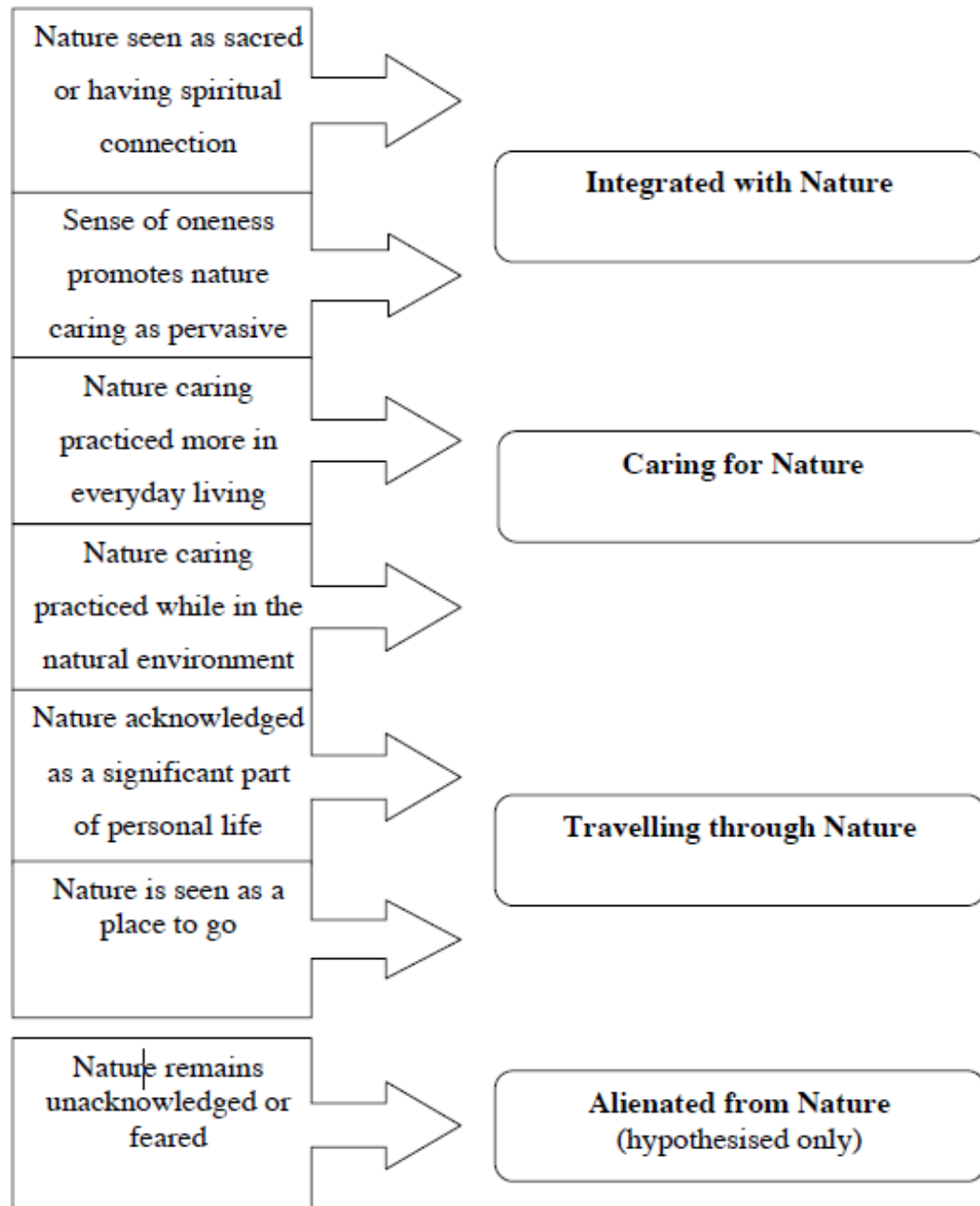
Investigator's signature: \_\_\_\_\_

Date: \_\_\_\_\_

### Appendix C

#### Signpost Self-Assessment Form

Please indicate where on the signpost you currently believe you sit



## Appendix D

### Observation Schedule and Checklist (adapted from Smith, 2011)

- **Setting**
  - Specific place/space. Grid reference if possible.
  - Specific activity
  - Use of place/space
  - Weather/lighting/time of day.
  - Interpretation of participant reaction/mood to place/space/activity.
  - Draw/take a picture
  - Approximate temperature and weather
- **Human and social environment**
  - Groupings/subgroups.
  - Pattern and frequency of interaction.
  - Group characteristics.
  - Are participant being respectful to the environment and each other
- **Activities and participant behaviours**
  - What are the participants doing
  - What is being said by the participants
  - How are the participants experiencing the activity
  - What is the leader doing
  - What is being said by the leader
  - How is the leader experiencing the activity
  - Method of debrief.
  - Participants' reaction to debrief.
- **Informal interactions and unplanned activities**
  - What people do
  - What are people saying to each other
- **Nonverbal communication**
  - Dress
  - Expressing affection
  - Physical spacing
  - Individual placement of self in space/place
- **What does not happen?**
  - Note things that don't happen.
- **Which Measure**
  - Signposts and Affective domain

**Remember: What as I looking at not what am I looking for**

## Appendix E

### Sample Interview Questions

Why did you agree to being involved? Did it change over time?

1. In 25 words or less can you summarize the expedition in terms of your experience of connecting with nature?

Now we are going to go through the expedition day by day.

2. Day 1:

- a. How did you feel at the start of the expedition?
- b. How did it feel to get to Solomon's Jewels or Wild Dog Creek campsite?
- c. What did you think about the stargazing?

3. Day 2:

- a. What was it like to spend the whole day in Wild Dog Valley knowing that the main Walls were just up over the saddle?
- b. Can you compare your experience of the morning session to the afternoon session? The wondering and storylines as compared to the orienteering and mapping exercise?
- c. Did the creation of your own stories help to connect with the place?
- d. Did the weather play a part effecting your experience as it became windy and wet in the afternoon?

4. Day 3:

- a. Did the wet affect your ability to connect with nature? How did you find the cold or wet affected you?
- b. How were you feeling at Dixons' Kingdom? Still excited about the trip or tired and a bit over it?

## 5. Day 4:

- a. How was the snow in the morning?
- b. How was your experience of Mt Jerusalem?
- c. How was the solo time up there for you?

## 6. Day 5: Dixons' to Wild Dog Via Golden Gate – off track.

- a. How was the off track day?
- b. How did it make you feel?
- c. Now that you have had time to think about the off track day in rough and steep terrain: How does the first day hill seem now?
- d. What was your favorite campsite? Dixon's or Wild Dog? Why?

## 7. Day 6:

- a. How did it feel to be leaving?
- b. How was going down the hill as compared with going up it? Was it a case of get to the bottom or did you savor it?
- c. Were your emotions happy or sad at the end?

## 8. Over all thoughts and feelings

- a. Did the weather affect your ability to connect with nature over the whole trip?
- b. Did your comfort level change over the course of the trip?
- c. Could you have done more days? How many?
- d. Gratitude played a large part in this expedition and unit as a whole, do you think that played a part in effecting you level of connectedness to the place or nature?
- e. Did your level of self-care change or effect the way you could connect with nature?

## Appendix F

### Values Coding Sample

#### Attitude

- A: nervous and excited
- A: connect with place
- A: walking up hill was hard at the time
- A: Relief to get to camp
- A: Enjoyed a relaxed evening
- A: shared experience
- A: Freedom to explore
- A: enjoy walking in rain
- A: not cold when walking
- A: expedition is different to the norm
- A: duckboard make you look at your feet
- A: New but good experience to hug a tree
- A: Hard to connect to religion
- A: Didn't learn anything from names lesson
- A: Comfortable with Navigation
- A: Pencil pine grove is spectacular
- A: enjoyed snow
- A: self-reflective about leadership
- A: enjoyment although uncomfortable
- A: Mt Jerusalem is spectacular
- A: Achievement and setting new goals at the top of Mt Jerusalem
- A: Humor helps with difficult times
- A: Bad food = being sick & vomiting
- A: Feeling sick
- A: off track fun

A: appreciates comfort

A: Felt like being pulled away and wanted to stay

A: lessons were all similar

A: Thoughts of and wanting to be home

A: knowing people is good

**Value**

V: Not enough food

V: stronger deeper connection from lesson

V: Hard work is worthwhile

V: Cool view of valley and mountains

V: comradery

V: Appreciation and enjoyment of day 2

V: Bethesda Lessons

V: Shared experience

V: emotion

V: fun playing games

V: quiet, alone, immersion, solo walk

V: Influence of self on other a positive

V: Influence of self on other a negative

V: Influence of other on self a positive

V: sharing personal stories

V: group bonding

V: appreciation of place and lesson at golden gate

V: group bonding and togetherness

V: most connected = day 3 at Dixon's

V: most connected = Mt Jerusalem

V: emotional home life

V: traditional owners and land lost

V: morning activity focused on place

V: story enforced connection to place

V: loved opportunities to connect proved by activities

V: Knowledge of place

V: learning with others

V: No wet feet

V: weather effects decisions

V: take in surrounds

### **Beliefs**

B: Prefer to be outside

B: Emotional influence of lesson

B: Can better express emotion through drawing

B: Society is disconnected from nature

B: Relationships set foundations for a good expedition socially

B: Weather influences experience

B: 3 pm umbles

B: Connection through story

B: Connection through activity

B: Experiences add to the story/memory

B: Experiences influence relationships

B: special to experience and reflect in a beautiful place

B: names lesson stands out because of emotion

B: understanding others love for the place

B: In the value of the solo walk

B: Awareness of self, other, place

B: proximity helps connection

B: value silence in places

B: connection to place need to be experienced, can be understood from books

B: CWN = relationship and friendship with nature

B: CWN = similar to human to human relationship



## Appendix G

### Round One Pattern Coding Sample

#### Attitude – comfortable/uncomfortable

- A: Relief to get to camp
- A: Enjoyed a relaxed evening
- A: not cold when walking
- A: Comfortable with Navigation
- A: enjoyed snow
- A: enjoyment although uncomfortable
- A: Feeling sick
- A: appreciates comfort

#### Attitude – enjoyment/irritations

- A: walking up hill was hard at the time
- A: Enjoyed a relaxed evening
- A: shared experience
- A: enjoy walking in rain
- A: expedition is different to the norm
- A: New but good experience to hug a tree
- A: Pencil pine grove is spectacular
- A: enjoyed snow
- A: Mt Jerusalem is spectacular
- A: Humor helps with difficult times

#### Attitude – reflection

- A: connect with place
- A: walking up hill was hard at the time
- A: shared experience
- A: duckboard make you look at your feet
- A: Hard to connect to religion

A: Didn't learn anything from names lesson

A: self-reflective about leadership

A: Achievement and setting new goals at the top of Mt Jerusalem

**Value – Connection self, others and nature**

V: stronger deeper connection from lesson

V: Hard work is worthwhile

V: Cool view of valley and mountains

V: comradery

V: Appreciation and enjoyment of day 2

V: Bethesda Lessons

V: Shared experience

V: appreciation of place and lesson at golden gate

V: group bonding and togetherness

V: most connected = day 3 at Dixon's

V: most connected = Mt Jerusalem

V: emotional home life

V: traditional owners and land lost

V: morning activity focused on place

V: story enforced connection to place

V: loved opportunities to connect proved by activities

**Values – emotion**

V: stronger deeper connection from lesson

V: Hard work is worthwhile

V: comradery

V: Bethesda Lessons

V: Shared experience

V: emotion

V: quiet, alone, immersion, solo walk

V: sharing personal stories  
V: quiet, alone, immersion, solo walk  
V: sharing personal stories  
V: group bonding and togetherness  
V: emotional home life  
V: traditional owners and land lost  
V: loved opportunities to connect proved by activities  
V: learning with others  
V: No wet feet  
V: weather effects decisions  
V: Know a tree  
V: changing weather  
V: beautiful place pencil pine grove  
V: Love Dixon's a beautiful place  
V: Love Wild Dog Creek Valley  
V: loved snow at Dixon's

**Values – place**

V: Cool view of valley and mountains  
V: Bethesda Lessons  
V: quiet, alone, immersion, solo walk  
V: most connected = day 3 at Dixon's  
V: most connected = Mt Jerusalem  
V: morning activity focused on place  
V: story enforced connection to place  
V: Knowledge of place  
V: religious place names had meaning

**Values – faith**

V: religious place names had meaning

V: faith, personally share something with the walls

V: reminder of faith

V: relate to lesson through faith

V: Mt Jerusalem – saying thank you to God

V: names of places had large significance to own belief

**Beliefs – relationships, self, others, nature**

B: Prefer to be outside

B: Society is disconnected from nature

B: Relationships set foundations for a good expedition socially

B: Weather influences experience

B: understanding others love for the place

B: proximity helps connection

B: CWN = relationship and friendship with nature

B: CWN = similar to human to human relationship

B: mostly a one-way relationship

B: last chance on expedition to build a relationship

B: Knowing the group makes it easier to focus and enjoy the expedition

B: Gratitude built connections to people

B: Connection to people helps with connection to place

B: Love outdoor teaching and learning

B: Everything outdoor is better

B: Maslow's hierarchy of needs

B: need to look after self before connection is possible

B: terrain make you shift focus from skill to surrounds

B: walk slow = see more

B: hard to connect if distanced

B: Some people like social connections, some people seek emotional connections

B: Slow down to connect

**Beliefs – connection to self, others, nature**

- B: Society is disconnected from nature
- B: Weather influences experience
- B: Connection through story
- B: Connection through activity
- B: Experiences add to the story/memory
- B: Experiences influence relationships
- B: special to experience and reflect in a beautiful place
- B: understanding others love for the place
- B: In the value of the solo walk
- B: most connected on day 3 evening after walk and waking up in snow
- B: 4pm umbles and rain influenced experience
- B: a significant moment in own life = creating the stories
- B: creating stories made connection stronger
- B: realized they had respect for everybody on the expedition

**Beliefs – emotion**

- B: Prefer to be outside
- B: Emotional influence of lesson
- B: Can better express emotion through drawing
- B: names lesson stands out because of emotion
- B: Emotion adds depth to lesson
- B: proud and accomplished
- B: Aboriginal lesson was deep
- B: Some people like social connections, some people seek emotional connections

## Appendix H

### Round Two Pattern Coding Sample

#### Attitude – comfortable/uncomfortable

Attitude – comfortable	Attitude – uncomfortable
Enjoyed a relaxed evening	Nervous and excited
Not cold when walking	Feeling sick
Comfortable with Navigation	Thoughts of and wanting to be home
Appreciates comfort	Physical struggle
Felt like being pulled away and wanted to stay	Dislikes rain
Changing attitude	Rain and glasses not good together
Stargazing is soothing and special	Singing was a distraction
Growing and changing comfort levels	Dixon's was favorite campsite
Not bad weather just annoying rain	Nervous and anxious with a heavy pack
Change in perspective to be more present and enjoy expedition	The hill was a shock to the self
Don't want to leave	Effected emotionally and mentally
More engaged	Emotionally drained self
Comfort with skills = enjoyment of experience	First gratitude made me feel uncomfortable
Laughing at falling over	Happiness with rain wears off after a while
Grateful for toilets	Annoyed to be standing in rain and not look for shelter
Feeling comfortable	Would rather stand back than say I don't know
Comfort level progressed	Found it difficult to be separated from Friendship group
Being warm and not hungry = being ok	Relieved to be leaving
Feeling of peace and "home"	

**Attitude – enjoyment/irritations**

<b>Attitude – enjoyment</b>	<b>Attitude – irritations</b>
Enjoyed a relaxed evening	Walking up hill was hard at the time
Shared experience	Humor helps with difficult times
Freedom to explore	Bad food = being sick & vomiting
Enjoy walking in rain	Hate classroom learning and teaching
New but good experience to hug a tree	Not wanting to walk fast
Pencil pine grove is spectacular	Dislikes rain
Enjoyed snow	Rain and glasses not good together
Mt Jerusalem is spectacular	Need to find or make shelter in the rain
Off track fun	Singing was a distraction
Knowing people is good	Walking pace increased throughout the day
Change in perspective to be more present and enjoy expedition	Nervous and anxious with a heavy pack
Focus on being present	The hill was a shock to the self
Don't want to leave	Effected emotionally and mentally
More engaged	Emotionally drained self
Loved off track	First gratitude made me feel uncomfortable
Laughing at falling over	Walking gives you tunnel vision, trapped in your own thoughts/head
Dixon's was favorite campsite	Weather influenced experience
Naming a tree is cool	Natural to feel cold
Trapper hill beautiful place	Happiness with rain wears off after a while
Sign in/out hut beautiful place to reflect	Annoyed to be standing in rain and not look for shelter
Feeling of peace and "home"	Cross at being disagreed with
Solomon's jewels beautiful and amazing	

**Value – Connection self, others and nature**

<b>Value – Connections with self</b>	<b>Value – Connection with others</b>	<b>Value – Connection with nature</b>	<b>Value – Connection self, others and nature</b>
<p>Hard work is worthwhile.</p> <p>Quiet, alone, immersion, solo walk.</p> <p>Emotional home life.</p> <p>No wet feet.</p> <p>Religious place names had meaning.</p> <p>Faith, personally share something with the walls.</p> <p>Reminder of faith.</p> <p>Snow connected to past positive experiences.</p> <p>Sun influenced mood.</p> <p>Being alone and singing in group.</p> <p>Challenged with direction of life.</p> <p>A great time to be present, physically and mentally.</p> <p>Appreciated not walking = break from mental</p>	<p>Appreciation/enjoyment of day 2.</p> <p>Being alone and singing in group.</p> <p>Comradery.</p> <p>Shared experience.</p> <p>Fun playing games.</p> <p>Influence of self on other a positive.</p> <p>Influence of self on other a negative.</p> <p>Influence of other on self a positive.</p> <p>Sharing personal stories.</p> <p>Group bonding and togetherness.</p> <p>Traditional owners and land lost.</p> <p>Learning with others.</p> <p>Leader's knowledge of people.</p> <p>Like gratitude.</p> <p>Level of care for others became more direct.</p>	<p>Mountain made me feel like the smallest thing in the world.</p> <p>Pine grove made me appreciate stillness.</p> <p>Navigation lesson brought meaning to both place and map.</p> <p>Stronger deeper connection from lesson.</p> <p>Cool view of valley and mountains.</p> <p>Appreciation of place and lesson at golden gate.</p> <p>Most connected = day 3 at Dixon's.</p> <p>Most connected = Mt Jerusalem.</p> <p>Morning activity focused on place.</p> <p>Story enforced connection to place.</p> <p>Loved opportunities to connect proved by activities.</p> <p>Knowledge of place.</p>	<p>Appreciation and enjoyment of day 2.</p> <p>The experience connected the group.</p> <p>Appreciation and enjoyment of day 2.</p> <p>Weather effects decisions.</p> <p>How places can make you feel.</p> <p>More time for lesson would help lesson connect more.</p> <p>Aboriginal history was a confronting and challenging lesson.</p> <p>Fun to create stories.</p> <p>Emotion detracts from lesson.</p> <p>Mapping lesson was great and supportive.</p> <p>Important to feel connected/togetherness.</p> <p>Solomon's throne was a beautiful place to connect to people, self and place.</p>



**Values – emotion**

<b>Values – emotion. Positive Value</b>	<b>Values – emotion. Negative Value</b>
Stronger deeper connection from lesson	Emotional home life
Hard work is worthwhile	Traditional owners and land lost
Comradery	Aboriginal history was a confronting and challenging lesson
Quiet, alone, immersion, solo walk	Challenged with direction of life
Sharing personal stories	Emotion detracts from lesson
Group bonding	Weather effects decisions
Group bonding and togetherness	Sun influenced mood
Loved opportunities to connect proved by activities	

**Values – place**

<b>Values – place. Negative impact</b>	<b>Values – place. Appreciation of place</b>	<b>Values – place. Influence of lesson or activity</b>
Humans have an impact on the wilderness even when they are not there	Cool view of valley and mountains Most connected = day 3 at Dixon's Most connected = Mt Jerusalem Beautiful place pencil pine grove Love Dixon's a beautiful place Love Wild Dog Creek Valley Loved snow at Dixon's	Bethesda Lessons Quiet, alone, immersion, solo walk Morning activity focused on place Story enforced connection to place Knowledge of place How places can make you feel Saw more going downhill than going up

**Beliefs – relationships, self, others, nature**

<b>Beliefs – Relationships with the self.</b>	<b>Beliefs – Relationships with others.</b>	<b>Beliefs – Relationships with nature.</b>	<b>Beliefs – Relationships with self, others and nature.</b>
<p>Maslow's hierarchy of needs</p> <p>Need to look after self before connection is possible</p> <p>Terrain make you shift focus from skill to surrounds</p> <p>Hard to connect if distanced</p> <p>Some people like social connections, some people seek emotional connections</p> <p>Slow down to connect</p> <p>Need space to connect deeply</p> <p>Physical challenge increases mental challenge</p> <p>Biggest challenge on expedition is mental challenge</p> <p>Too many things going on in home life to boost connection with nature</p>	<p>Relationships set foundations for a good expedition socially</p> <p>Understanding others love for the place</p> <p>Knowing the group makes it easier to focus and enjoy the expedition</p> <p>Gratitude built connections to people</p> <p>Gratitude brings groups together</p> <p>Group formation is essential</p> <p>Respect is important on expedition and should be developed</p> <p>The group influences experience</p> <p>Off track was a group challenge rather than an individual challenge</p> <p>As group became stronger care for self</p>	<p>Prefer to be outside</p> <p>Society is disconnected from nature</p> <p>Weather influences experience</p> <p>Connection to people helps with connection to place</p> <p>Love outdoor teaching and learning</p> <p>Everything outdoor is better</p> <p>Mt Jerusalem = intimate and deeper emotional connection</p> <p>Challenge is important to build relationships to place</p>	<p>Some people like social connections, some people seek emotional connections</p> <p>Need space to connect deeply</p> <p>Mt Jerusalem = intimate and deeper emotional connection</p> <p>Proximity helps connection</p> <p>CWN = relationship and friendship with nature</p> <p>CWN = similar to human to human relationship</p> <p>Mostly a one-way relationship</p> <p>Walk slow = see more</p> <p>Social connection of off track different to personal/emotional Mt Jerusalem connection</p> <p>Different types of relationships</p>

**Beliefs – connection to self, others, nature**

<b>Beliefs – connection to self.</b>	<b>Beliefs – connection to others.</b>	<b>Beliefs – connection to nature.</b>	<b>Beliefs – connection to self, others, nature.</b>
<p>Growing comfort level over trip</p> <p>Maslow's hierarchy of needs</p> <p>Need to look after self before connection is possible</p> <p>Walking is a technical skill</p> <p>A desire to be integrated with nature</p>	<p>Understanding others love for the place</p> <p>Knowing the group makes it easier to focus and enjoy the expedition</p> <p>Gratitude built connections to people</p> <p>Social connection of off track different to personal/emotional Mt Jerusalem connection</p> <p>Gratitude connects group</p>	<p>Society is disconnected from nature</p> <p>Weather influences experience</p> <p>Connection to place need to be experienced, can be understood from books</p> <p>CWN = relationship and friendship with nature</p> <p>CWN = similar to human to human relationship</p>	<p>Connection through story</p> <p>Connection through activity</p> <p>Experiences add to the story/memory</p> <p>Experiences influence relationships</p> <p>Special to experience and reflect in a beautiful place</p> <p>In the value of the solo walk</p>

**Beliefs – emotion**

<b>Expression of emotion.</b>	<b>Emotional connection.</b>	<b>Negative influences on connection.</b>	<b>Positive influence on connection.</b>
<p>Prefer to be outside</p> <p>Can better express emotion through drawing</p> <p>Proud and accomplished</p> <p>Deep relationships are personal and different for everyone</p>	<p>Emotional influence of lesson</p> <p>Some people like social connections, some people seek emotional connections</p> <p>Emotional connection is very important</p>	<p>3 pm umbles</p> <p>Not professional to start crying in lesson</p> <p>It was too much effort to put the tarp up</p> <p>Names lesson is difficult to do</p>	<p>Names lesson stands out because of emotion</p> <p>Emotion adds depth to lesson</p> <p>Aboriginal lesson was deep</p> <p>Wild Dog Creek Valley gave freedom from own thoughts</p>

## **Appendix I**

### **Activities and Lessons**

#### **Day One**

##### **Park History.**

- **Location:** Trappers Hut.
- **Description:** An information session on the Walls of Jerusalem national park area history.

##### **Aboriginal History**

- **Location:** Solomon's Jewels
- **Description:** A lesson on Aboriginal history in the Walls of Jerusalem area. This included a timeline of events from pre-history to current day, a poem and participant reflections.

##### **Knot tying.**

- **Location:** Wild Dog Creek campsite.
- **Description:** Teaching session on basic knots such as bowline, rolling hitch, sheet bend, reef knot and figure eight knot.

#### **Day Two**

##### **Wandering and storylines.**

- **Location:** Wild Dog Creek Valley.

- **Description:** Participants were split up into two groups of four and assigned an area approximately one-kilometer square of Wild Dog Creek Valley to explore and create a story that would serve as a map for the other group. They were allocated two hours to wander and one hour to write their story.

### **Mapping and Rogaine.**

- **Location:** Wild Dog Creek Valley.
- **Description:** A lesson on basic mapping skills, culminating in a rogaine which is a mapping activity similar to orienteering. Participants were given two hours to collect as many checkpoints as possible in uneven and untracked terrain.

## **Day Three**

### **Pencil Pine**

- **Location:** Pool of Bethesda
- **Description:** A lesson on the uniqueness of the Pencil Pine, involving a Pencil Pine familiarization session, ages of the pines and writing a creative story from a Pencil Pine's perspective.

### **Walls of Jerusalem place names**

- **Location:** Pool of Bethesda.
- **Description:** A lesson on the meanings and origin of the names of places in the Walls of Jerusalem.

### **Triangulation.**

- **Location:** Pool of Bethesda.
- **Description:** A mapping lesson consisting of using three or more points on a map to find your current location.

### **Owl eyes**

- **Location:** Pool of Bethesda.
- **Description:** A game of observation and self-awareness. One participant (the owl) is stationary while the other participants try to come as close as possible to the owl without being seen.

### **Solo walk.**

- **Location:** The Temple/ Solomon's Throne saddle to Dixons' Kingdom.
- **Description:** Participants walk alone for one kilometer through a Pencil Pine forest.

## **Day Four**

### **Off track navigation preparation.**

- **Location:** Dixons' Kingdom Hut.
- **Description:** Route planning for day five's off track navigation.

### **Geology**

- **Location:** Dixons' Kingdom Hut.
- **Description:** The geology lesson consisted of information on the geological timescale of the Walls of Jerusalem area, including ice ages and dominate rock

types in the area. It concluded with a creative story written from a rocks perspective.

#### **Mt Jerusalem walk.**

- **Location:** Dixons' Kingdom Hut to Mt Jerusalem and return.
- **Description:** Afternoon walk to the summit of Mt Jerusalem.

### **Day Five**

#### **Fauna**

- **Location:** Golden Gate.
- **Description:** The participant leading this lesson used the other participants existing knowledge to demonstrate the types of fauna in the area. It was concluded with a talk on the effects that human beings can have on fauna, such as leaving rubbish and food.

#### **Off track navigation**

- **Location:** Dixons' Kingdom Hut to Golden Gate.
- **Description:** In two groups, participants navigate independently from Dixons' Kingdom Hut to Golden Gate.

### **Day Six**

#### **Flora**

- **Location:** Wild Dog Creek Campsite

- **Description:** The flora lesson used the participants' imagination and creativity to teach about the flora in the campsite area. Participants were tasked with finding and naming three plants that appealed to them.

### **Huts**

- **Location:** Trappers Hut
- **Description:** The huts lesson involved participants undertaking a guided meditation from a mountain huts perspective through the changing of the seasons and years. It concluded with a toast to the people and places that allow us to have expeditions in areas such as the Walls of Jerusalem.